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Editorials.

THE DETECTION AND SUPPRESSION OF DISEASE.

BUREAUCRATIC *v.* SCIENTIFIC METHODS.

TIME was when every district had its own veterinary inspector, generally the most respected surgeon in the neighbourhood, and every suspected case of contagious disease was reported to him, and he gave an immediate and authoritative verdict, which was at once put into force by the police authorities. In those good old days, when the local surgeon was puzzled or uncertain he telegraphed for the supervising surgeon, one of whom used to be the late principal Editor of this JOURNAL. This was the final appeal, unless, of course, a point of law was involved, and the individual or the district was at once subjected to the restraints framed by the Board of Agriculture. At a later period this was changed, and veterinary inspectors were appointed to a large tract of country, to whom information as to outbreaks should be communicated by the Board of Agriculture in London, after the police-officer of the locality, on notification by the owner of the animals, had sent word to it, and without any intervention on the part of the local veterinary surgeon, as was formerly the case. It was thought at the time that, at any rate, a practicable—if not a perfect—scheme had been evolved, and that, whilst local jealousy had been rendered ineffective, reasonable attention had been given to the claims of our profession, and at the same time the welfare of stockowners and of the public generally had been safeguarded. The plan seemed an honest and fair attempt to harmonise all the conflicting interests, and, whilst admittedly a compromise, was apparently an honest compromise.

Now, let us see how this scheme, so excellent from the theoretical point of view, has been perverted in practice and made not only ineffectual for the public safety, but a source of degradation for our profession. For these unfortunate results the bureaucratic spirit must bear the blame; that spirit has penetrated into the working of the Contagious Diseases (Animals) Act, and brought discontent and exasperation everywhere. The scheme has been made to work

as follows:—An outbreak of, say, swine-fever is suspected or feared by a farmer. One of his animals perhaps dies, and another begins to droop; if he is a wise man, he does not wait for the death but takes alarm at the drooping. He at once informs the nearest police-officer, and that functionary telegraphs to the Board of Agriculture, who, in the course of twenty-four hours or so, send the District "Veterinary" Inspector upon the scene. The "veterinary" inspector is probably convinced in his own mind that the animals are suffering from swine-fever, but he can offer no opinion. Even if pressed he refuses to speak, or he answers evasively. He, however eminent he may be in his profession, is, in this instance, not a veterinary surgeon, as he is not authorised to give an opinion, and, were he to do so, he is in danger of being contradicted by the authority in London. He orders the slaughter of the sick animal, or, if any one has already died, he simply does what any ordinary butcher could do just as well—he opens the carcase and removes certain viscera which he sends, enclosed in a water-tight bag, by post or express train to London, addressed to the Board of Agriculture. It is almost certainly next morning before the viscera can be examined, as the office of the Board closes, we presume, like all other Government offices, at four in the afternoon, and even in the most favourable circumstances it would be found difficult to get the viscera into London and delivered at the office of the Board, prepared for examination, reported on, and a reply telegraphed between morning and evening. It may safely be taken for granted then that no report can be even telegraphed till the following day, and what havoc may the disease not have already caused? But it will at once be noticed that in saying so much we have not exhausted all or even the chief possibilities of danger. There is, apart from the question of railway delay or blundering, the chance of a blunder on the part of the attendant at the Government office, whose duty it is to open the parcels and display their contents for examination. Is there an absolute mechanical guarantee that the viscera, as displayed on the table, always correspond with the name and report of the sender? that viscera *A* and viscera *B* have not, in short, been transposed? A more delicate question, but one which forces itself upon us as an essential though very painful one, is the infallibility of the Government experts or their capacity for judging of a case after only incomplete inspection; for it must be granted that—given general competence—the surgeon who sees the sick, dying, or dead animal, *plus* viscera, has a much better chance of diagnosing disease than another surgeon, a hundred miles away, who sees only the viscera. Have the Government officials not undertaken a scientific, and not only a scientific but an economic, responsibility too heavy for their shoulders? Do not the conditions make it impossible of fulfilment?

The position of the veterinary surgeon is in any case a humiliating one. Farmer A. suspects infectious disease, and would very

much like to call in his old friend B., a veterinary surgeon, who has acted as his family doctor, so to speak, for many years. But B. unfortunately is not the official inspector; able man though he is, he has been passed over as perhaps not being sufficiently compliant for official purposes. The farmer has therefore to inform the village policeman, who in his turn informs C., the Government inspector. Inspector C. may be an excellent fellow, but he cannot know so much of the stock history and constitution as B., and besides, as we have already said, he is not allowed to give an opinion for fear it should be different from that of his official superior. In this complication even B. dare not inspect the animals or give an opinion, except as a private friend, for fear again that it should be different from that of the Board of Agriculture. The farmer himself is not allowed to have an opinion; his animals are clean or unclean, not according as nature, but as the Board of Agriculture decides. We have heard of a case in which a large shipment of cattle was made to this country from America, and on arrival was put in quarantine by the official inspector; in vain did the foreign Government petition that their inspector—one of the ablest men in this country—should be permitted to examine the cattle; in vain did the shipping company, for their own sake, make the same request. Mere scientific men, your ordinary pathologist, or an enquiring veterinarian, might be allowed to take a peep at the animals, but he must not speak of what he saw; it had to be understood that omniscience was to be found only at the Board of Agriculture. In this connection it may not be superfluous to remind readers of the VETERINARY JOURNAL of the dispute between the late Principal Williams and the official authorities regarding disease in Canadian cattle; fortunately that struggle ended in a victory for science.

We have the very strongest regard for discipline and order, we sympathise profoundly with the Government in its efforts to establish and maintain a uniform system for the detection and suppression of disease in the domestic animals, but we cannot congratulate it on the success of the present system. We have endeavoured to point out the most serious defects of that system in the hope that some remedy may be found. We have, of course, our own ideas as to the shape which reforms ought to take, but we shall not give expression to these ideas until called upon to do so. In the meantime we commend the whole subject to the consideration of our professional brethren in the first place, then to farmers and stock owners, and then to the public at large. It is really one which affects the whole nation.

THE Master of the Horse, the Duke of Portland, has appointed Mr. W. Owen Williams Veterinary Surgeon to the Establishment of His Majesty's Stables.

THE LATE PROFESSOR NOCARD.

I HAVE been requested by M. H. Vallée, Secretary of the Nocard Memorial Committee, to bring the subject of a Memorial to the late Prof. Nocard before the English-speaking public, and I have much pleasure in doing so. It seems almost superfluous to say anything in vindication of the claims of Prof. Nocard to the grateful remembrance of the veterinary world. He was, at the time of his death, probably the most distinguished veterinary surgeon in the world, and certainly one of the most distinguished scientific men of his time. Whatever he said was listened to with the most absorbed attention; whatever he wrote was copied, translated, circulated with the most eager haste. His opinion was generally regarded as final, and it was felt that whilst one might differ as to the methods, one must come sooner or later, willingly or unwillingly, to the same conclusion. It is not often that we veterinary surgeons are the objects of so much respectful attention, even after death, when praise is all the more readily bestowed, because it is not likely to become a valid claim. It therefore becomes all the veterinary surgeons in Great Britain to mark the importance of the occasion by contributing to this Memorial. Science knows no country, and the mere fact that Prof. Nocard was a Frenchman need not interfere with our generous appreciation of his abilities. I shall be greatly pleased to receive subscriptions from readers of the VETERINARY JOURNAL during December. These subscriptions will be duly acknowledged in the JOURNAL, and duly forwarded to Alfort. Further information as to the Memorial will also be published in the JOURNAL as it arrives, so that subscribers will know to what purpose their money is being put.

W. O. W.

His Excellency the Lieutenant-Governor of the Orange River Colony has been pleased to approve the appointment of Captain J. F. Joyce and Lieutenant A. Hodder, Veterinary Officers, South African Constabulary, as Veterinary Officers under the Animals Diseases Ordinance of 1903.

Original Papers.

A CASE OF ABSCESSES OF THE SPLEEN, WITH GASTRIC ULCER AND A GASTRO-SPLENIC FISTULA.

BY LIEUTENANT A. L. WILLIAMS, A.V.D., NEEMUCH, CENTRAL INDIA.

As diseases of the spleen are uncommon, and there is not much known about them, I thought this record of a peculiar spleen case would be interesting enough for publication in your valuable Journal.

Subject.—An eight-year old artillery draught horse. Admitted into hospital on the morning of August 5th, reported off feed, dull conjunctival mucous membrane injected with yellowish tinge, temperature 105·2° F.

The blood on microscopic examination showed considerable increase in the number of leucocytes.

Symptoms, Treatment, &c.—Treated as a case of bilious fever, with salines, febrifuges, biliary stimulants, &c.

On *Aug. 7th.*—Acid (salicylic) was given in addition to salines and stimulants.

Aug. 10th.—Respirations and pulse increased in the evening, T. 106·2, mustard applied to chest and region of liver. Patient very weak, staggers about the box, gave alcohol, feeding well on oatmeal, linseed boiled, bran, lucerne.

Aug. 12th.—Patient showed signs of sub-acute abdominal pain, lying down, grunting and looking towards the side. Breathing of a pleuritic character, pleuritic line present, no sign of pleurisy on auscultation. Fomentations to sides and abdomen.

Aug. 13th.—Seemed easier after fomentations, gave tr. digitalis and pot. iodidi.

Aug. 15th.—Conjunctival mucous membrane very badly injected, covered with claret coloured petechial blotches and a dirty yellow base. Slight diarrhœa, stopped the digitalis, gave carbolic enematas.

Aug. 16th.—Jugular pulse irregular, intermittent heart's action, gastric symptoms for first time, patient eating mud of manger and chewing dirty bedding. Sponging reduced temperature from 104·4° to 102·8°. Sodæ bicarb. given in the drinking water.

Aug. 17th.—Commenced intravenous injection of iodine morning and evening, and continued on 18th and 19th.

Aug. 19th.—Salivation of ropey mucus started mid-day and lasted about one hour; started again about 4 P.M., and stopped after about one hour.

Aug. 20th.—About 7 A.M. patient showed signs of pain, staggered about the box, lay down, stretched himself out, seemed to get into a comatose condition, and died without a struggle about 9.30 A.M.

Autopsy.—The spleen weighed 22 lbs. and was a gangrenous fœtid mass, there were several large abscesses throughout the organ, the interior of the abscess cavities filled with gangrenous fœtid matter.

There was serious infiltration of the abdominal muscles in the left flank, the spleen was adherent to the peritoneum over a surface about 10 inches square under the superior portion of the last two or three ribs, a splenic abscess had penetrated the peritoneum, and was burrowing into the abdominal muscles.

On section pus oozed from numerous points, in many places the splenic tissue had undergone disintegration and was unrecognisable.

The stomach was firmly adherent to the spleen by its greater curvative.

On opening the stomach I found an ulcer at the junction of the cuticular and villous coats.

The gastric ulcer had the appearance of being an old lesion, the walls of the stomach were greatly thickened at this spot, and the edges of the ulcer indurated and wrinkled, a fistulous like tract connected the ulcer with a splenic abscess, and there was a free passage from the stomach into this splenic abscess. The interior of the tract was filled with a blackish fœtid cheesy matter.

On the villous coat there was a tumour about the size of a hen's egg, the walls thickened, centre cyst-like and filled with blackish cheesy matter.

There were about twenty larvæ of œstrus equi in the stomach, and one I scraped out of the gastro-splenic fistulous tract.

The abdominal cavity showed generalised septic peritonitis, the whole of the abdominal viscera and peritoneum covered with fibrinous exudation.

The intestines in places showed muco-enteritis, but the principal intestinal lesion was inflammation of the peritoneal and muscular coats, with thickening of their walls by a jelly-like yellowish exudation. The discoloration varied from red to claret-colour. The spleen was firmly attached to a portion of the intestines. Liver congested, nutmeg appearance. Lungs showed slight apical congestion. Pericardium showed some petechial spots.

Remarks.—Although there was generalised peritonitis, the only time the patient showed any sign of abdominal pain was on the 8th day; the symptoms were sub-acute and only lasted about an hour. The patient lay on the right side, and looked back towards the left flank.

Diarrhœa started on the eleventh day, was only slight, and I thought it was probably due to some muco-enteritis, also to the digitalis.

The breathing was not unusually thoracic, and flanks fixed, but just the opposite; it was of a pleuritic character, and a marked pleuritic line was present.

This was puzzling, as there were no signs of pleuritic trouble on auscultation, but when I saw on post-mortem the enormous abscess fixed to the abdominal wall I ceased to wonder why the breathing was so peculiar.

First sign of gastric trouble was on the 12th day, and salivation of ropey mucus commenced the day before death.

The type of fever led me to suspect a septic condition, but I could not make any definite diagnosis.

Sponging with cold water and vinegar was the only thing that had any effect on the temperature; it dropped 2° or more in half an hour or so, but was only temporary.

The patient fed well up till two days before death, and did not lie down but once or twice the whole time. The gait was peculiar from the onset, the patient moving stiffly as if the muscles of the loins were affected. With reference to the condition of the conjunctival mucous membrane, I have seen many bad cases of malarial biliary fever with very nasty looking conjunctival mucous membranes, but I have never seen any case quite as bad as this was. The petechial condition started about the fifth day—two or three ordinary petechial spots, they became rapidly larger and darker in colour until on the ninth or tenth day. The membrane nichtaris was covered with very dark claret coloured petechial blotches and a dirty yellowish background; it was somewhat like the colour of a piece of intestine in a case of strangulation.

OUTBREAK OF ANTHRAX IN HORSES.

BY W. HEPBURN, JUNIOR, M.R.C.V.S., COLDSTREAM, N.B.

On the 2nd August we were called in as Board of Agriculture inspectors to visit a stud of farm horses in which anthrax was said to have broken out. On arrival we found a brown mare had died at 3 A.M., and a brown horse and brown mare were very ill.

From the owner we heard that nine horses, fifteen cattle, and some sheep were grazing in an old grass field when the outbreak occurred, and this field had lain in grass for fifteen years. A bullock had died suddenly in the same field in July, and had been bled there. Two sewers run through the field, and some time ago one had been choked, and sewage had filtered through, forming a pool.

The brown mare was noticed ill on August 1st, about 7 P.M.; she then showed swelling of the throat, and was scouring. She was brought to the farm steading along with the other horses, and died next morning about 3 A.M.

The brown horse and mare were first noticed ill about 6 A.M., and the symptoms shown were—great dulness, heavy sweating, rigors, elevated temperature, eye glazed, conjunctiva of a yellow colour, the breathing very rapid and laboured, accompanied by a gurgling noise in the throat, froth of a yellow colour and bad odour trickled from the nostrils, and there was great swelling in the submaxillary space and parotid regions; the tongue seemed normal in size, but of a bluish colour.

The animals only dropped a few minutes before death, the breathing becoming worse and the swelling of the throat increasing in size. After death the body rapidly began to swell, the anus protruded, and fæces covered with blood came away, and gas accumulated beneath the skin The horse died at 1 P.M., and the mare at 3 P.M.

Blood was taken from the ear of the horse for examination, and the anthrax bacillus was found.

The temperature of the other horses was taken, and all were normal.

On August 3rd, a brown mare showed similar symptoms and died about 4 P.M., after being about six hours ill.

On August 4th, a brown mare, No. 1, took ill; she was off her food, dull, temperature 103°, breathing rapid and laboured, a small quantity of yellow froth escaping at the nose, conjunctiva yellow, and slight swelling of the parotid region.

A black horse took ill about 10 A.M., and presented the same symptoms in a modified degree, and a brown mare, No. 2, showed a slight rise of temperature.

On August 5th, the black horse died about 1 P.M., showing the same symptoms as those previously attacked. Brown mares, Nos. 1 and 2, presented no change.

On August 6th, brown mare, No. 1, seemed to be feeding better; temperature still 103°. Brown mare, No. 2, feeding, temperature 102°.

On August 7th, brown mare, No. 1, off food; temperature still 103°; breathing worse, and discharge from nostrils greater. Brown mare, No. 2, feeding; temperature normal.

On August 8th, brown mare, No. 1, still feeding; temperature 103°; discharge from nostrils worse, and more noise in breathing. Brown mare, No. 2, feeding; temperature normal.

The other horses were all feeding, and their temperatures normal.

A bullock that had been grazing in the same field was noticed to be off his food, and brought in. He was noticed to be dull, tucked up, and at intervals breathing was accelerated. Temperature 106½°.

On August 9th, brown mare, No. 1, symptoms more aggravated; temperature 103°; pulse 60, and full; heart sounds loud, and the impact strong against chest-wall; discharge from nostrils tinged with blood.

Brown mare, No. 2, feeding; temperature normal. Bullock, symptoms same as on the 8th; temperature 107°.

On August 10th, brown mare, No. 1, symptoms same as on the 9th; pulse 70; temperature 103°. Bullock, temperature 106½°.

On August 10th, brown mare, No. 1, same as on 10th. Bullock, temperature 105°.

On August 15th, brown mare, No. 1, no change since last seen. Bullock had ceased to blow; temperature 101°.

Brown mare, No. 3, noticed to be off food, and a large swelling along the abdomen, firm to the touch and sharply defined; temperature 101°.

On August 17th, brown mare, No. 1, no change in symptoms, but temperature a little lower. Brown mare, No. 3, abdominal swelling larger, fæces blood-stained and pellety; pulse very weak; temperature 101°.

On August 18th, brown mare, No. 3, died at 2 A.M.

On August 22nd, brown mare, No. 1, improving; discharge not so great; noise in the throat ceased; and swelling gone down considerably.

On August 29th, brown mare, No. 1, still improving; swelling of throat entirely gone, and discharge stopped; temperature normal.

On September 5th, mare all right again and putting on flesh rapidly.

FALLING OUT OF THE HAIR A SEQUEL TO CONTAGIOUS PNEUMONIA OF THE HORSE.

BY HENRY TAYLOR, M.R.C.V.S., NEW VETERINARY COLLEGE, EDINBURGH.

A YOUNG bay van gelding recently had a severe attack of contagious pleuro-pneumonia which left him extremely weak and thin.

During convalescence the hair began to fall out; the first place was on the near side of the neck, then the head, then the sides of the chest, abdomen, and insides of the fore and hind legs. The insides of the fore-arms almost looked as if they had been shaved, but the other spots were not so fully depilated. There was no itching with the exception of the first patch on the neck. At the present date a new growth has covered all the spots.

ŒSTRUM OCCURRING AFTER OÖPHORECTOMY IN A BITCH.

BY HENRY TAYLOR, M.R.C.V.S., NEW VETERINARY COLLEGE, EDINBURGH.

THE subject of the above was a Manchester terrier whose history is as follows:—In the spring of 1901 the animal became pregnant, and was brought to the College in labour as she was unable to be delivered. After about two hours' work I succeeded in getting away, per vaginam, three or four very large puppies. In the autumn of the same year she again became pregnant, and was brought again in a like state. This time, having arranged with the owner, I performed cæsarean section and removed four (?) large puppies. At the same time I attended to the ovaries, to prevent any future recurrence of what was to the owner a troublesome thing. The right ovary I excised in the orthodox way, viz.—by ligaturing above and

below and then removing it; but as something went wrong with the prepared ligature cord I had to treat the left ovary by enclosing in one tight ligature, the artery going to the ovary and the fallopian tube. This of course would render the organ functionless, and even though it were not excised it would finally atrophy, and be equivalent to removal.

She made a good recovery, and brought up the one puppy which we allowed her. Since that time she has regularly come in œstrum, and has copulated with the male on several occasions—indeed, it was to an accident occurring during copulation that her owner had her lately destroyed. She never became pregnant after the operation.

TUBERCULOSIS IN AN AUSTRALIAN OPOSSUM.

BY MAJOR J. MOORE, A.V.D.

THE following is rather interesting:—In 1895 while at Remount Depôt, Calcutta, two opossums were given to me by one of the Queensland shippers of horses. They were about six months old. After having them six weeks, one of them, the better looking one of the two, was found one morning with paralysis of both hind legs. I thought at first it had fallen and injured its back, as they used to climb up the wire netting of a house I had built for them and several kangaroos. But on examining the little beast carefully I found an enlargement of one of the stifle joints, exactly of the nature of a strumous enlargement or abscess sometimes found in sheep. A few days afterwards it died, and the post-mortem examination showed the lungs one mass of tubercles.

The other remained to all appearances perfectly healthy for a year, when it escaped and was never seen again.

SOME INTERESTING CASES.

BY W. HUGHES, M.R.C.V.S., CAERWYS.[1]

MR. CHAIRMAN AND GENTLEMEN,—When I promised to write a paper for this meeting I looked upon it as a necessary duty to be done, as nearly, if not all, the members had supplied one. I couldn't think of anything more practical and likely to draw forth a good discussion, which is the chief aim of a paper of this kind, than a series of interesting and to me unusual cases which have come across my path these last few years. I hope that you will also find them interesting, and that a good discussion will follow.

ROARING AND THORACIC CYST.

The first on the list is one that would have made you put on your thinking caps (if you had seen her alive) as to the cause of the symptoms produced—in fact, it is the only one of its kind that I have had the good luck to see, and I may say the same for the late Mr. T. K. Williams.

January 1894.—A brown carriage mare, aged, very fast, had been working for seven or eight years, perfectly healthy in every respect, and often

[1] Read at a Meeting of the North Wales Veterinary Medical Society on Sept. 7th.

seen by us on the road in passing. One day, when out in the carriage (double harness), she stopped, became very excited, began to tremble, signs of suffocation appeared, roaring, &c. She was immediately taken out of harness, and in a few minutes all symptoms had disappeared, and she was driven quietly home. Mr. Williams saw her a day or two after; examination revealed nothing abnormal, mare perfectly healthy to all appearance; eating, &c. She was taken out of the stable for a trot up the drive, when, after going 50 or 60 yards, the symptoms mentioned appeared, and in addition she fell down. Difficult respiration predominated, the heart in the meantime could be distinctly heard, quick and fearfully irregular. Mr. Williams was very much puzzled as to the cause, or rather how the roaring was produced, and suspected some pressure on laryngeal nerve supply. She had to be assisted to the stable where she came round in a short time. She was left in a loose-box for a week, when we both saw her. Coachman had seen nothing wrong during the interval, and clinical examination detected nothing. We had her out, and as usual after trotting some yards the same symptoms appeared. She was taken back to the stable, where she soon settled down. We decided to try tracheotomy as an experiment, also to gain time. Mr. Williams went to the house to speak with the owner about her; during his absence, some five minutes, the mare became excited from some unknown cause, the usual symptoms quickly appeared, she began to roar and fight for breath, rock, and roam about, until she fell down. Roaring increased, and death ensued in a very short time (six or eight minutes) from asphyxia.

A post-mortem was made straight away, and revealed a large cyst at the base of the heart and large blood-vessels, exerting pressure on the left laryngeal nerve, thereby causing the symptoms of suffocation. The cyst had very thin walls, and contained about half a pint or more of serous fluid. It must have been of recent origin, as the mare worked as usual up to twelve or fourteen days of death.

There is no doubt that the cyst also interfered with the action of the heart on being exercised. The laryngeal nerve was stretched around the posterior aorta and the cyst, which lay in front. It would be interesting to know whether tracheotomy would have been successful. We believed that it would, but there is to be considered the danger that the cyst, instead of being absorbed, would have gone on increasing, and, when the mare was exercised, caused syncope and probably death. I must leave that as a debatable point.

GLOSS ANTHRAX (?).

The next case, or cases rather, are ones that I want information about—gloss anthrax they are, or first cousins. I have met three since Christmas; all died; no post-mortem was made. We did intend sending the head of one up to the College, but pressure of work at the time prevented a post-mortem being made. I have seen a great many such cases, but can't call to mind a single recovery.

Symptoms.—The patient is attacked rather suddenly; head, lips, eyes, and cheeks swollen, saliva flowing rather freely, sometimes the swelling is confined to one side of face, other times general, the submaxillary glands enlarged and very painful, head hanging down. Pulse varies; in some cases there is nothing abnormal about it. Temperature, again, is not high in the beginning, usually about 102 F., and it rarely reaches an excessive height; 104 F., as far as I can remember, is the highest recorded by me.

On examination of the mouth the tongue is often found congested, enlarged, and with purple coloured vesicles on its different surfaces. The mucous membrane of the mouth altogether is congested, and often vesicles are found on it; these vesicles in a few hours burst, leaving nasty-looking ulcers; the saliva is then bloody-looking and foul-smelling; the gums are often found swollen, and in two or three cases I remember removing with my fingers two of the molars, the odour of which was very disagreeable.

On looking over some old notes I came across the following case, which is typical, with the exception that the tongue was normal. Cob mare, four years old, found one morning swelling about the nostrils and eyelids. We saw her the following day, and found the head very much swollen, especially the right side, both eye and nostril on that side closed by excessive swelling; there was a discharge from that nostril that smelled very badly, and hung in a long flake (no blood was mixed with it); a good deal of serum was also running from it; there was no discharge from the left nostril, but there were numerous little spots, light purple in colour, on the mucous membrane; submaxillary glands were swollen and painful. Respirations normal; temperature 101 F. Pulse varied—in one minute it would be 60, in another 52, or perhaps 56. In this case the tongue was normal, no injury or wound could be detected. Diagnosis of course was blood poisoning, cause not known, unless blame could be settled on the dunghill, which came right up to the stable door; there was also a stagnant pool of drainage from the manure—we blamed that. She died in two days. Sometimes these cases live three or four days, the swelling always increasing. Treatment with us had no effect. Tracheotomy, head slung up, and mouth continuously worked with a padded stick, to disperse or reduce swelling, cold and hot water alternately. Pot. iodide, quinine and iron, pot. chlor., antiseptic gargles have been amongst the remedies. In the next case I intend to try intravenous injections of iodine, and subcutaneous injections of formalin locally. Williams' "Medicine" gives very little information; it is just mentioned as a form of anthrax. Robertson gives a fuller description, and has seen a few recoveries; he recommends the application of strong carbolic acid to the vesicles after opening them. Perhaps in the discussion one of you might be able to tell us of a successful case, but I always have looked upon the animals as done for. I have always failed to find a wound or other cause to account for the symptoms. Perhaps the cases have been too far gone for examination, although in some they have been seen the first day attacked. Great care has always been taken in the disposal of the carcases; six feet holes, lime top and bottom. The stable or box thoroughly cleaned and disinfected. I have never seen two cases in the same stable, so can offer no opinion as to its infectious or contagious nature.

TUMOUR IN NASAL CAVITY—NECROSIS.

The subject of the specimen before you was a well-bred Shire filly, rising three years, bought along with another, unbroken. Nothing wrong was noticed until she was taken in hand to be broken, some four or five years after purchase, when she was found to make a noise on being excited or galloped. I was called in, and on examining her found that very little air could enter the right nasal chamber, thus causing her to make a noise on being exercised. On passing my finger up I could just reach the distal end of a smooth growth. Diagnosed a tumour (without any difficulty)

filling the nasal cavity, and probably the sinuses of the right side of face. I had the mare brought over to me for operation, she was cast and chloroform given (as I had a London final-year's student staying with me at the time). The hair was cut as closely as possible, two incisions were then made through the skin, about 3½ inches apart, covering the nasal, frontal, and maxillary bones, the muscles lying underneath, dissected from the bone, and pushed aside; the skin was then lifted like a flap backwards, which left a large space for operation. I then trephined through the nasal bone in two places, when we found that we had a stiffer job than we bargained for. The frontal bone was then trephined in two places and the intervening bone, both nasal and frontal, cut away with a bone forceps, when we had an opening five or six inches long and fully three wide. The tumour was then found to completely fill the entire cavity, both the superior and inferior turbinated bones having been absorbed. It was impossible to pass the finger between the bone and the tumour so as to find, if possible, where it was attached. The tumour was cut through in two with a sharp bistoury, which separated a large piece. The other part was removed with a probe-pointed bistoury in sections, the bistoury breaking during the operation. We searched, but failed to find the broken half. The bone where the tumour was attached could easily be felt deep down in cavity; felt very rough, so it was scraped with a curette. The cavity was cleansed carefully with tow and the patient allowed to come round, after having been down fully an hour. She walked well to the stable, about 100 yards distant, where she started to breathe heavily, became unsteady on her feet, and ultimately fell down. She struggled to her feet, and we got the men to steady and keep her from falling, while I attempted to give her a good stimulant, but it was impossible to give it and for her to swallow, and as a last resource I gave her injections subcutaneously of cafeine, which altered her in a few minutes. She received a second injection in fifteen minutes, after which she settled down nicely. While we were attending to the mare a dog belonging to one of the men assisting swallowed the tumour, which had been put in a bucket for safety. I felt the loss, as we intended sending it up to College for examination. It was of a gritty nature, and required some strength to cut through it.

After thoroughly cleansing the nasal cavity and wound, the flap of skin was let down and sutured. After-treatment consisted of washing out the cavity through the nostril, and iodoform used with an insufflator. She did well for nearly two months, made no suspicion of a noise on being galloped, when a nasty discharge started, which continued. She was cast again, and opened over the seat of the first operation. I may say that I was only half satisfied as to what had become of the broken half of the bistoury, and when the discharge appeared I suspected that it was hidden somewhere in the bone, but of course kept that to myself. On examination of the cavity I thoroughly satisfied myself that it couldn't possibly be there. Suspecting the teeth as having something to do with the mischief—although numerous examinations of the mouth failed to lead me or show anything very much wrong, and she ate her food all through quite normal—I trephined through the maxillary bone, opposite to where the tumour was attached. Finding the third molar (I took it to be the third molar at the time) looking black and caried, it was punched out. The post-mortem proved that it wasn't the third molar that was punched out, the fang reached right up, as you can see on the specimen. In passing, you no doubt have

read how easy it is to punch molar teeth out. Well, I have had occasion to operate on three cases, and have always found them operations one would sooner shuffle out of. Perhaps mine have been exceptions, or I have been too humane and not hit hard enough. My cases were all under chloroform, or I would have been very sorry for the poor beasts, for it must be a fearfully painful operation. It is a pity that we can't always be as wise *before* the event as *after*. How nice it would have been if I had only known that it was the fang of a molar tooth that was projecting into the nasal cavity. The result would not have been different—for I consider that it would have been impossible to punch that out, but I would have destroyed her sooner without a second operation. During the second operation, finding the state of things so bad—the entire maxillary bone diseased and spongy, I determined to destroy her, which was done a day or two after. You will notice a hole over the fourth molar; there was a fistula present there, which appeared about a month after the first operation, with a stinking discharge pointing to teeth or bone, so at the second operation I opened and enlarged it, and finding caries or necrosis present there, it finished me—I had had more than enough of her.

A DOUBTFUL CASE—GLANDERS (?)

An aged grey hunter, bought the end of last season, looked as if he had had a hard season, being poor. When taken out of the box at the station the groom noticed that he was coughing very badly and had a discharge from the nostrils, especially the near one. I was consulted about him. Examination showed pulse, temperature, and respirations normal, coughed very much after exercise, discharge from near nostril the colour of glue, and in flakes; his eyes were peculiar, being bare of hair around them, and a sticky discharge accumulating in the corners; there was also a discharge from the sheath. Examination of the penis revealed nothing definite—only an accumulation of the discharge at the point or fold or membrane under extremity of penis. The submaxillary glands varied; sometimes they would be enlarged and painful, other days normal. The mucous membrane of the nose is always a peculiar bluish or leaden colour. His appetite is enormous—he eats as much as any two horses; wasting considerable; no thirst or excessive urination present. He was put on a tonic treatment. No good! Then we treated the symptoms, *i.e.*, cough, &c. No good again. So I decided to leave him alone for a week, and then test him with tuberculin. His temperature was taken night and morning. It only went as high as 100 F. on one taking, keeping at 99 to 99½ all the time. He was injected on July 15th, at ten P.M., when his temperature was 100¾ F.

July 16th.—	7 A.M.	102
	10 „	102½
	1 P.M.	102½
	4 „	102¾
	7 „	102½
	10 „	102

Well, there was nothing very definite about the test, and at the same time it was suspicious. In a fortnight's time he was tested with mallein. I am sorry that the chart has been mislaid (Mr. Locke, of Manchester, has a copy), but it will suffice if I tell you that the temperatures after injection

coincided almost exactly with the temperatures after the tuberculin test; but the local reaction was a prominent swelling measuring 7½ inches by 6½ inches, then it tapered off right up to the parotid region, and down to the point of the shoulder (the injection was made in the neck), which took over a week to disappear; the horse could hardly bear you to look at it, let alone touch it. I know that many high authorities would have thought that the local reaction was quite sufficient to prove that he was glandered; in fact many depend upon the local reaction, and don't trouble about the thermic reaction, but I looked upon it as doubtful, and had Mr. Locke, senior, Manchester, down in consultation, who thought it very remarkable that the temperatures should have been identical in both tests, and if it hadn't been so he would have looked upon the mallein test as definite. As it was, he looked upon the reaction with very grave suspicion, so we have decided to test him again for glanders. The patient is now on the grass, having good feed, and seems to be holding ground. He is now having 2 drs. pot. iodide twice a day. I am sorry, gentlemen, that he hasn't yet been tested the second time for glanders, but the owner, or rather the owner's wife, pleaded that he should be turned out for a month to see what he would do before testing again. At the same time I think that there is plenty about him to raise a discussion. I am living in hopes of making a post-mortem on him some day.

ADHESIONS OF THE FLEXOR TENDON TO ITS SHEATH CURED BY OPERATION.

BY NOBLE SMITH, F.R.C.S., EDIN., SENIOR SURGEON TO THE CITY ORTHOPÆDIC HOSPITAL, LONDON.

At the beginning of the hunting season of 1902-3, I bought a weight-carrier who proved to be a good hunter. After riding him a few times with hounds, he developed lameness in the near fore-leg. He would start out sound, but the lameness would come on either soon after starting, or after he had galloped for half an hour or more.

After a few days rest the lameness would disappear to return again upon the next day's hunting.

The lameness was peculiar, there was little or no heat, but the leg above the fetlock joint was tender to touch and swollen. The region of the flexor tendon, about three inches above the fetlock joint, seemed to be the chief seat of mischief, but the latter could not always be localised.

There was a small mark at the outer side of the region of the tendon, which looked as if a thorn had entered, and I thought of making an incision at this place to see if I could find a buried foreign body, but I deferred operation. The horse improved so much with rest, and as I was otherwise occupied, nothing was done. During the summer he seemed sound, and he bore daily walking exercise perfectly well. In the beginning of October of this year, however, he suddenly broke down during exercise, and the lameness was as bad as ever, accompanied by enlargement of the fetlock joint and above it.

The sheath of the tendon at the place mentioned, *i.e.*, from three inches above the fetlock for two inches upwards, was thickened, but not apparently hotter than natural.

The horse was so lame that he could hardly move about his loose-box.

I now determined to operate, and explore the affected part. On October 5th, 1903, the horse was cast, and chloroform administered, and I made a longitudinal incision at the side of the thickened tendon sheath, about four inches in length. I also cut down transversely to the leg at the side, about one and a half inches above the fetlock on the outer side of the leg. The tissues appeared quite healthy. Upon careful exploration with the finger, I could find no thorn or other foreign body. I then opened the sheath of the tendon for about three inches longitudinally, and explored up and down with my finger. There were slight adhesions at several points, and these I easily broke down with my finger. I then stitched up the parts. The operation was done upon strict antiseptic principles.

For the next few days the patient stood with the knee bent and the hoof extended forwards.

At the end of a week the wounds were practically healed, and the animal held the leg straight. At the end of another week he was apparently well, and the leg and joint quite fine in appearance. He stood and walked quite soundly, and since then he has gone out for walking and trotting exercise every day.

He is naturally rather fresh when he leaves the stable, and in moving brings his feet down with considerable force, but there is not the slightest symptom of lameness. The leg remains perfectly clean and fine.

Nov. 16th, 1903.

Remarks.

Taking into consideration the history of the case, as far as I know it, I can find no other explanation of the lameness than that of the presence of the adhesions between the tendon and its sheath. Whether these adhesions were formed while the horse was in my possession or not I cannot say, but I think it very probable that they occurred previously.

Some strain in hunting may have occurred, setting up inflammation in the affected part, and the horse being consequently rested, the adhesions occurred.

Moderate movements did not affect the action, but upon first galloping pain was produced.

The separation of the adhesions by the operation restored power of free action by removing the obstruction which previously existed.

It seems to me probable that this kind of lameness is far more frequent than is commonly supposed, and, if I am right in this conjecture, it follows that many horses suffering from obscure lameness might be cured which now are condemned and passed over to the knacker.

[Might not this have been a case of invasion of the sheath by the *Spiroptera reticulata* so well described in Neumann's *Parasitic Diseases of the Domesticated Animals*, page 555.—Ed. *V. J.*]

XUM

Translations and Extracts.

JEAN LAMY, LE ROMAN D'UN VETERINAIRE.

BY M. EMILE DODILLON, PUBLISHED BY M. LEMERRE ET CIE.

Two plays have been written in English, "Milky White" and "Lyre and Lancet," in which a veterinary surgeon figures, the latter being adopted from our contemporary *Punch*, but neither of them are to be taken seriously. Indeed, after having seen both, we came away more fully convinced than ever of the truth of the old saying, "one-half of the world does not know how the other half lives," as in our thirty years' experience we have never met a veterinary surgeon resembling either of the two depicted.

As far as we are aware, M. Dodillon's novel is the first in which a veterinary surgeon is selected as the hero, and it is an account of his life and struggles. Jean Lamy is the only son of a village schoolmaster, and his mother's death so preys on the mind of his father that he commits suicide, leaving his son an orphan at the age of ten. He is adopted and educated by his father's brother-in-law, a priest, who sends him to the Government college at Melun, and finally to Alfort.

Just as he has finished his studies and obtained his diploma, the Franco-Prussian war breaks out, and he serves through the siege of Paris as a corporal in the Garde Mobile of Seine et Marne. Some powerful pictures, "which are M. Dodillon's own experiences," are drawn, many being realistic in the extreme. The hardships, mismanagement, and misery of this campaign are described, and all the sordid and horrible side of war shown up, with the skill of Zola in *la Débacle*. His friend and comrade, Saurenerau, is killed close to him in a skirmish near Bourget. "A bullet through his loins, he fell, but did not seem to feel the wound, and tried to get up from the snow and mud, but fell back on his hands, and Jean remembered the dogs whose spinal cords had been divided in the physiology class, dragging themselves along by the fore paws, the paralysed hind quarters trailing along the ground."

The hero comes through the war safe and sound, settles himself in practice at Perthes, a pretty village between Melun and Fontainebleau, with a capital of 600 francs, and marries the daughter of a professor of German in the college of Melun, whose father is dead, and who herself is an assistant clerk in the post-office. His wife's family is described,—a ne'er-do-weel brother, who is a private in a cavalry regiment, and two sisters, dressmakers. There is also a half-sister by a former marriage, of whom the description is truly French, "Mlle. Eléonore de Guyenne, célèbre dans le *monde galant*."

He remains at Perthes three years, during which time he has two sons born, when he obtains an appointment as meat inspector in the Villette Market, and moves to Paris. A daughter is born, and his wife becomes ill from pneumonia. She is treated by an old friend of Jean's, Laviron, who is a doctor of medicine and professor of anatomy at Alfort. Laviron brings in his old master, Dr. Dulac, of Lariboisiere, who tells Jean that his wife cannot stand the winters of Paris, and advises him to practise in the south or centre of France. He hears of a good practice for sale at Bordeaux, but the price is 25,000 francs, which he has not got, and does not know

from where to borrow it. His sisters-in-law suggest Mlle. Eléonore de Guyenne, but Jean refuses to apply to her. She, however, is acquainted with Laviron, who is an admirer of an old friend of hers, Mlle. Irma, and invites him to call on her, and we learn how the Alfort professor has in four years spent 300,000 francs, "pour connaître une de ces femmes de romans, dévoreuses d'or et d'hommes, plaies des familles," and now, like Falstaff, he now means "to eschew sack and live cleanly." A money-lender, Coutenceau, is known to these two, who on their joint bill for 33,000 francs at 5 per cent., advances 25,000, which Laviron takes to his friend Jean. He quits Paris for Bordeaux, and fortune smiles on him, and we leave him with his two sons, one of whom is house surgeon at the hospital at Beaujon, and the other a lieutenant of infantry, at the deathbed of his benefactor, the priest.

The novel is worth reading, for although the morals on some points are not ours, it gives a true picture of middle-class French life, especially as regards our profession on the Continent, which to most is a sealed book. M. Dodillon has dedicated his work to M. Nocard. J. A. N.

"PINERS" IN DAIRY HERDS.

THE English Jersey Cattle Society have issued a second edition of their very useful handbook,—"Jersey Cattle: their Feeding and Management" (Vinton & Co.). The work, which has been revised and enlarged, is based upon replies to questions on a variety of practical matters sent out to members of the society, and it may therefore be regarded as embodying the results of the experience of the breeders of Jersey cattle in this country. The committee to whom the production of the present edition was entrusted comprised the Hon. Alexander E. Parker, Mr. W. Adams, Mr. F. R. Hervey Bathurst, Mr. Richardson Carr, Mr. G. Murray Smith, and Mr Ernest Matthews, the last named undertaking the duties of editor. A new chapter in this edition deals with the subject of wasting diarrhœa, or, more precisely, parasitic gastro-enteritis. As this disease is far from being peculiar to Jerseys, the information here brought together is likely to prove serviceable to cattle-breeders generally. In different parts of the country the names of "wasters," "wastrels," "piners" are applied to cattle of both sexes which pine or waste away, without exhibiting any febrile symptoms or loss of appetite. The disease usually begins with diarrhœa, and in the case of animals in milk the yield of milk at once begins to decline, a feature which distinguishes this disorder from ordinary diarrhœa. The results of recent investigations point to the presence of certain species of nematode worms, or thread-worms, in the fourth division of the ruminant stomach as associated with and probably causing the disease. Various suggested remedies that have proved more or less effective—specially in the direction of killing the nematodes—are discussed, and a case that came within the experience of Mr. Matthews himself is worth mentioning. He has had several "wasters" during the last ten years, and has tried various remedies, but without success. Keeping the animals in and giving them lime water to drink has sometimes temporarily improved their condition, though without effecting a permanent cure. In recent years he had invariably isolated the animals, and had them killed as soon as it became apparent

that they were "wasters," and not suffering from the ordinary form of diarrhœa. Quite lately he has tried another method of treatment. Having ascertained that a solution of tobacco was fatal to nematode worms, he gave doses of pure tobacco to an ailing cow. The doses comprised ½ oz. of black shag tobacco the first thing in the morning, the same dose the following day at the same time, the third day no dose, the fourth and fifth days the first dose repeated, the sixth day no dose, the seventh and eighth days the dose again repeated, and then the cessation of the treatment. The effects of the tobacco were manifested in various ways, and especially in the speedy regaining of flesh and condition. Within ten days after the first dose the cow had so much improved in appearance that she was turned out with the object of seeing if the gain in condition would be maintained. After being out at grass for three weeks she was still putting on flesh, and was apparently in the best of health. It is to be hoped that further experience will serve to confirm the efficacy of tobacco as a vermicide in connection with this disease. In any case, dairy farmers throughout the country will be interested in this apparently successful effort to cope with a disorder which it is to be feared frequently involves them in serious loss.

CANADIAN SWAMP FEVER.

For many years past—in fact, ever since settlement first began—there has been known in the Red River Valley a peculiar and very fatal disease of horses. Its exact nature has not even yet been decided, although it has long engaged the attention of stock owners and veterinarians in the district, now widely extended, where it is most prevalent. It is a disease of low-lying and swampy country, and is therefore popularly known as swamp fever, although it has been called by various names, such as surra, progressive pernicious anæmia, low fever, typhoid fever, and malarial fever. This last is undoubtedly the most appropriate, although its malarial origin has not yet been clearly proved.

It generally makes its appearance in late summer or early fall, few fresh cases being observable between December and the latter part of July. Its onset is most insidious; the first three or four exacerbations, being slight and of short duration, are frequently overlooked by the owner, and in this way the disease gets a firm hold of the system before professional advice is sought or treatment adopted. Ordinary cases live from two to four months after seizure, although under favourable conditions life may be prolonged to a much greater extent. The most prominent symptoms are emaciation, at first gradual, but becoming much more rapid as the disease progresses; œdematous swellings of the abdomen and limbs, constantly increasing pallidity of the visible mucous membranes, on which also petechial spots are occasionally seen, a peculiar soft flat pulse, which is in itself almost diagnostic, and, most important of all, a periodical rise and fall of temperature ranging from normal to 105°. The appetite, though somewhat capricious, generally remains good until within forty-eight hours of the end. As the disease progresses there is frequently noticeable a lack of muscular control, but this symptom is not constant, and is, I think, due more to general weakness than any specific cause.

The action of the bowels remains normal throughout, but there is fre-

quently an increased flow of urine, particularly in the latter stages of the disease. Recovery is in my experience very rare, although I have seen several animals rally under steady treatment, and regain a full measure of strength and vitality. Occasionally a case will appear to improve, and hopes of recovery may be entertained, only to be destroyed by a sudden relapse leading to a fatal termination.

There is no evidence that the disease is contagious. Post-mortem examination reveals the muscular tissue almost bloodless; what little blood is to be seen in the vessels is pink rather than red, owing to diminution and disintegration of the red corpuscles. Yellow gelatinous deposits are also found among the muscles, especially in the pectoral region. The lungs are anæmic, but otherwise apparently normal. The liver is frequently enlarged, while the tissue is soft and friable. The spleen is small, friable, and light in colour. The kidneys are often somewhat enlarged, but flabby and easily broken down; while pus is sometimes present in their organs, upon which also fatty deposits occur. The bowels are pale and flaccid, and not infrequently show on the mucous surface large petechial patches of a brownish colour. The muscular tissue of the heart is abnormally soft, and deposits of fat are generally to be seen on this organ. Greenish clots are almost invariably present in the heart and the large vessels leading from it, and on the lower aspect of such clots is a thin layer of pinkish coagulum, which on examination proves to contain red corpuscles, many of them broken down.

Treatment has hitherto been of little avail, almost every agent in the pharmacopœia having been called into requisition with negative results. The treatment recommended for surra by Dr. Lingard, chief of the civil veterinary service in India has of late years been adopted by some veterinarians. This consists of a long-continued course of arsenic, beginning with a dose of four grains twice daily, working gradually up to eight or ten grains, continuing the maximum dose daily for a week, and then gradually reducing the dose until four grains is again reached. This course continued for a long period, when combined with mineral and vegetable tonics, and, if possible, change to high dry ground and general healthy surroundings, has perhaps been more satisfactory than any other yet tried.

The mortality from this disease is in some districts simply appalling, many settlers having been completely ruined by its ravages amongst their horses. Fortunately there are many parts of the country where it is entirely unknown, and many other localities where only an occasional case is met with.

The investigation has until this year been left almost entirely to private effort. Two years ago the Government of Manitoba made a grant of $260, to which was added a small sum by the veterinary association of the province. This money was carefully expended by Dr. Torrance, who in conjunction with Dr. Bell, Provincial Bacteriologist, was chosen to conduct the work, but it of course proved altogether inadequate for the purpose for which it was intended.

With your approval I have this year arranged with the gentlemen already named to make a thorough investigation, which has now been in progress for some time. The report of this work, furnished by Dr. Torrance, will be found most interesting and instructive.

This disease has unfortunately been frequently confounded, not only by laymen but by many veterinarians, with various forms of influenza, which latter malady has been more or less prevalent in Western Canada for the

last ten or twelve years. Where the diseases are co-existent, as they undoubtedly are in several districts, there is some excuse for this confusion, but there is little real resemblance between them, and any one familiar with the so-called malarial fever cannot well mistake it for anything else.

It is to be hoped that the researches now being carried on will be the means of not only determining the true nature of this destructive malady, but of discovering a method of dealing with it which will put an end to the serious losses which it has hitherto caused.

(Report of the Minister of Agriculture for the Dominion of Canada for the year ending October 31, 1902. Sect. 15, Report on Health of Animals, by J. G. Rutherford, V.S., Chief Veterinary Inspector.)

SURRA.

At a meeting of the Manila Medical Society, held at the Government Laboratory on April 7th, W. E. Musgrave presented a preliminary report on trypanosomiasis (surra) in horses in the Philippine Islands (*Boston Med. and Surg. Journ.*, June 25th). Recent experiments show that surra can be transmitted by direct inoculation of the blood from a diseased animal, and by the bite of a horse fly which had previously bitten a surra horse. To determine whether food could convey the disease, grass and hay was smeared with surra blood and discharges, and fed to healthy animals without effect, none contracting the disease. A different result was obtained, however, after lesions were produced in the horses' mouths and they were then fed on grass infected with the surra micro-organisms, as the disease is frequently acquired under such circumstances. Sore-mouthed horses are thus liable to contract the disease from infected fodder, and it may possibly be that the mastication of rough, coarse *sacate* grass may induce minute lesions through which infection may occur. It is not probable that the surra parasite could long maintain an extra-corporeal existence on such grass, as sunlight seems soon to destroy its vitality. The biting fly, which has been found to transmit the disease, has been shown to be closely allied to the "tsetse fly" of South Africa. So far experiments have not demonstrated an intra-corporeal existence of the surra parasite in the fly as an intermediate host. The life-history of this fly has not been worked out as yet. It is known that animals may be protected against surra infection by removing them to the hills during the rainy season, and the existence of "surra districts" is recognised. Some believe that the disease is dependent upon the use of water and grass from these districts, but animals fed on dry hay or fodder from other districts and given only pure water contract the disease while passing through the "surra district." The disease is fatal in horses, but it is said that in India camels recover from the affection if they are able to survive for three years. Opinion in the Philippines is divided with respect to the disease being indigenous. Many believe that it was introduced by some racehorses brought in about four years ago; others think it has been in the Philippines always. As the Filipinos and Spaniards pay little attention to veterinary medicine, this point cannot be decided. So far, no treatment has been found which has any effect in curing or staying the progress of the disease, and for this reason once an animal has been shown to be infected it should be promptly destroyed and the carcase cremated.—(*B. M. J.*)

PLAGUE IN DOMESTIC ANIMALS.

BY JAMES CANTLIE, M.B., F.R.C.S. ENG., SURGEON, SEAMEN'S HOSPITAL SOCIETY.

THE report that has recently reached this country that several fowls, a duck, and a quail, exposed for sale in the Hong Kong market, were found to be infected with plague is one which is calculated to create alarm, or, at any rate, to open up a wide field of inquiry. The fact that domestic animals, and animals exposed for sale as food, are subject to plague helps, perhaps, to explain the endemicity of the disease and the persistency with which it clings to a town or district where once it has prevailed. It is an old belief amongst the Chinese in Yunnan that almost all domestic animals are liable to plague, and they actually formulate a scale of relative infectivity amongst animals. The Chinese believe that the animals which by their stature are nearest the ground, such as mice, rats, cats, &c., contract the disease first, and that the taller animals—pigs, sheep, cattle, and horses—are less liable, and are always attacked subsequently to the smaller animals. Whatever truth there may be in this observation, there is no doubt the statement that domestic animals are readily liable to plague is correct.

The experiments carried on in 1902 by Professor W. R. Simpson and Dr. Hunter in Hong Kong have taught us new facts in connection with the infectivity of domestic animals. By vaccinating, inoculating, and more especially by feeding animals on plague cultures, or on the blood or organs of plague-infected animals, Professor Simpson showed that monkeys, sheep, calves, pigs, fowls, geese, ducks, pigeons, turkeys, &c., readily contracted plague, and one of the most telling results of his observations has brought home to us the fact that they more readily became infected when fed upon plague bacilli, in any environment, than by any other known means of causing infection. He proved also that the bacilli were found in the flesh, in the organs, and in the excretions of these animals, and the fact that skin parasites readily acquired the bacillus when fed on plague-infected animals had long been known to us.

How far the flesh of these animals is concerned in communicating plague would seem to depend upon the degree to which it is cooked. The flesh of thoroughly cooked plague-infected animals can perhaps be consumed with impunity, but in China thorough cooking is regarded by some classes of the community as calculated to destroy the flavour of the food, and they not infrequently partake of entrails after merely washing them. In connection with this subject it may be of interest to know that the Chinese use the duck—one of the animals which readily contract plague—in various ways in cases of illness. In attacks of fever from whatever cause duck's blood is liberally smeared over the face, neck, trunk, and limbs, and the duck is used as we use a poultice. In abdominal pains a live duck is split open along its ventral aspect and then immediately, whilst warm, applied to the abdomen of the sufferer, as we would a hot fomentation or a linseed meal poultice.

In China and in many Oriental countries the domestic animals, such as fowls and pigs, live in close proximity to human beings, so close in fact that they are often under the same roof, and housed or allowed to wander about in the same apartment. The consequence is that whether the human beings or the animals contract plague first, either may infect the

other, for each is liable to the disease. In this way the disease becomes endemic in a particular house or apartment, whilst other houses or apartments close by are free from plague.

Our attention has perhaps been too closely bestowed upon rats as the carriers of plague; for whilst pursuing that theory, we have neglected the facts now brought to our notice, that any or probably all domestic animals do suffer from the disease, and that a multitude of other foci of infection are at hand.

Of acute and chronic forms of plague in animals the latter is the more interesting from an epidemiological point of view. Professor Simpson finds that pigs may suffer from plague for weeks without betraying any symptoms of illness. He tells us that pigs with plague remain in apparently good health, even when their temperature is 103° F. or more; and it is only by carefully recording their temperatures that we have any evidence that they have departed from the normal. For three or four or more weeks, the pig may suffer from high fever after contracting plague, but until a few hours before death it gives no sign or symptom of illness.

Turkeys may live after being infected for as long as 44 days, ducks for 54 days, geese for 35 days, sheep for 34 days, and so on. During all this time, however, the animals are giving off plague bacilli in their fæces and urine and infecting the parasites which inhabit their skin and its coverings. Men and animals which are brought into intimate contact with them are thus exposed to infection.

These new facts in connection with plague help us to understand its persistency, its endemicity, and the difficulty of its eradication, for it would appear that every living thing in proximity with a plague focus may contract the disease. The transmission of plague by ships is, in the light thrown on the subject by recent facts, keenly brought home to us. At plague-infected seaports every kind of device has been practised to prevent rats getting from the infected shore to the ship or from the infected ship to the shore. But whilst guarding against rats, the fowls, geese, ducks, turkeys, sheep, and pigs may have been brought on board for purposes of consumption by the crew or passengers, or for transmission from port to port. Each and all of these animals, however, may be infected, suffering from chronic plague, and yet giving no sign or symptoms of illness. The rats in the ship may be free from plague until the fowls come on board, yet it is only when these rodents die that plague is suspected. The acrimonious discussion as to whether the rats are infected first and man afterwards, or *vice versa*, has raged for several years, but the varying evidence brought forward may find its solution in the fact that it was some other animal that infected both, and the rat and man developed the disease almost contemporaneously. Plague has frequently occurred whilst the rat remained free, as proved by the most careful bacteriological inquiry, and epidemiologists have, in their conviction that the rat and the rat only is the carrier of the disease, been led astray in their investigation. Plague appeared in Glasgow, but no rats were found infected until twelve months afterwards, and there can be no doubt that some other animal from on board a ship sailing from a plague-infected port was the conveyor of the disease.

The prophylaxis of plague therefore assumes a much wider proportion than has hitherto been bestowed upon it. Any and every animal received on board ship may possibly convey plague; it may be suffering from

plague and yet show no signs of illness. The fowl will readily eat its food, and the pig's appetite will continue as voracious as ever, even when the temperature of the former may be 107° F., and that of the latter 104° to 105°.

These are problems which the sanitary officer of the port must at once take in hand if plague is to be controlled. The one evidence of plague in animals short of examining the blood or excretions of the animal for plague bacilli is that of temperature; so that it comes to this, that the temperature of every animal previous to being received on board from a plague-infected port should be tested, and steps taken to weed out the apyrexic from the pyrexic—a laborious process no doubt, but it is the only means known to us at present how to separate the infected from the healthy. Not only, however, is it domestic animals that are known to be infected. The marmot in Mongolia was proved by Clemow to suffer from plague; bats were found to be infected in Naples; pigeons, which were until recently held to be immune, are now known to succumb readily to the disease; and the story of the crow flying over Rome, falling dead in the street, and infecting children with plague who picked it up is readily explainable in the light of modern research.

What is wanted is a ready means of diagnosing plague in animals; for to take the temperature of each pig of a large consignment, or to examine the blood for plague bacilli is an ordeal the best equipped port officers could not possibly do. Could we tell by inspection that an animal had plague, we might hope to be able to control plague in some measure, but until we discover a rapid method of diagnosing plague in animals, I fear we have little hopes of combating the spread of the disease.

(*British Medical Journal*, September 26th, 1903.)

A NEW NORTH AFRICAN TRYPANOSOMA.

BY M. RENNES, VETERINAIRE EN SECOND.

Communicated to the Paris Central Veterinary Medical Society, 25th June 1903.

In December 1902 MM. Bussard and Schneider (*Recueil de Médecine Vétérinaire*, 15th December 1902) stated that another Trypanosoma in addition to that of Dourine existed in Northern Africa, but did not produce positive proof, and in the beginning of the year I observed a disease amongst the horses of the 2nd Spahis, quartered at Sidi Medjahed Oran, an epidemic disease, the symptoms of which appeared to be identical with those the subject of the present paper. I sent some specimens of blood to the laboratory of Oran, but unfortunately they got so damaged in transit as to be useless. I still, however, maintained my opinion, and the discovery by M. Schneider of a trypanosoma morphologically different to that of dourine in some cover glass specimens sent to him by M. Szewzyck did not surprise me (*Recueil de Médecine Vétérinaire*, 30th April 1903, page 220).

M. Szewzyck had already described the classical appearance of the trypanosoma he studied at Sidi Medjahed, and which I afterwards observed at Beni Ounif, in the extreme south of Oran. In all I came across about twenty cases, and there can be no doubt of the existence of a disease in Northern Africa quite different from Dourine.

SYMPTOMS.

The best description I can give to the disease is pernicious anæmia, and the different stages can only be divided artificially. The onset is insidious and slow. Generally the animal appears to be dull, and easily tires, which is perhaps the first thing that is noticed, but all that is noticed is slight paleness of the mucous membranes. Gradually the animal becomes more and more anæmic, and although the appetite remains good he loses condition. In some cases nothing is to be seen but the blanching of the mucous membrane, the temperature being a little above normal, 38° in the morning to 38° or 39° Cent. at night. As the case progresses the emaciation and general weakness become more marked. Movement is uncertain, the horse tripping and dragging his hind limbs.

Febrile attacks then come on; if down, the limbs on the side that is uppermost are continually moved. When standing, the head is hung down, the eyes half closed, and the weight continually shifted from one limb to the other. Although pallid, the conjunctivæ is studded over with petechiæ, the movements of the flank are quickened in number, the pulse quick and small, appetite *nil.* The attack is of short duration, only lasting from about 12 to 24 hours.

The case goes from bad to worse, but may last for months, the appetite being irregular, sometimes altogether lost, green food being preferred to grain. Usually the expression is one of suffering, but the patient is not indifferent to his surroundings, sometimes even regaining his spirits. There is manifest weakness of the hind quarters, with knuckling over at the fetlock. Paraplegia supervenes, and once down, the patient gets rapidly weaker.

Generally there is violent struggling, turning round the head and looking at the flank, as if suffering from colic, and pawing with the fore limbs. The eyelids, cheeks, and muzzle are swollen, ecchymosed, and bruised, the eyes wide open and staring with an agonised expression, the respiration being panting and convulsive.

There is often constipation, with paralysis of the rectum and bladder, death taking place on the 3rd to the 5th day.

This form lasts for from four to six months, and is frequently complicated with attacks of fever and hematuria, rarely nervous disturbance, which cuts short its progress.

Febrile attacks are very violent but transient. In the morning the patient may be found standing motionless, the limbs stretched out, nostrils dilated, respiration short and quick, the conjunctivæ injected and yellow, studded over with petechiæ that are numerous and clearly defined. In the early morning and till noon the temperature may range from 38° to 43° Cent., the appetite be wholly lost, with great dulness and prostration. These symptoms may all disappear the same evening, and next morning the patient appear in his usual condition, with the exception that the mucous membranes are still discoloured and covered with petechiæ, which, however, are less well defined. These attacks come on regularly, at intervals of eight, ten, and fifteen days, and they seem to denote that the attack will be severe. They are also often followed by difficulty in locomotion.

Hematuria may appear at any moment, and may range from a pure state to a deep colour of the whole of the urine that is voided. It is, however, very transient, and only lasts for one or two days, reappearing at regular intervals.

Nervous symptoms are uncommon, but well marked. They usually appear before the anæmic stage. Thus is seen a well-marked case of ataxy. also one of temporary paraplegia, followed by inco-ordination and vertigo.

The course, and especially the duration, of the disease appears to be dependent on the nervous lesions. At the very outset a fatal attack of cerebral congestion may supervene, possibly caused mechanically. Possibly these secondary complications may more early supervene in an anæmic subject.

It is almost impossible to foretell what the course of the disease may be, as an animal whose membranes are absolutely blanched may live for a long period, whereas another that comparatively is better may be attacked with paraplegia and die in a few days.

Serous.

These consist of anæmics, and there is nothing characteristic. There is extreme emaciation, the muscles are pallid in colour, and the blood fluid, thin, and does not coagulate. There is thickening with or without the formation of false membranes, especially the pericardium, and the heart and muscles of the loins are pale in colour, with patches of ecchymosis on them which are dark and strongly in contrast to the surrounding tissue. The urine is dark coloured or red, and almost always loaded with albumen.

When death has taken place from vertigo there is great infiltration of all the tissues, a quantity of yellow serum containing small blood clots extending from the muscles on section, as well as from the lungs and liver. A characteristic lesion is congestion and hæmorrhage of the messuages at the base of the brain, the plane of the cranium being covered with a number of small clots that are firmly adherent to it.

If the case is prolonged there is paralysis of the rectum and bladder.

Comparison between the other Trypanosoma.

There is complete absence of œdema, the characteristic subcutaneous plague. The characteristic nervous symptoms, and the fact that the disease can be spread otherwise than by copulation, clearly mark the difference between the "Mal de la Zous Sana" and "Dourine."

In "Surra" there is the large amount of œdema, the appearance of urticaria, with rapid evolution; and the same applies to nagana, which is difficult to distinguish from surra.

The "Mal de la Zous Sana" greatly resembles the "Mal de Caderas," except that hypertrophy of the spleen is seldom seen in the former, whereas it is common in the latter, but as Signienes has pointed out, the petechiæ on the mucous membranes are persistent (*Recueil de Médecine Vétérinaire*, 30th January 1903); the nervous symptoms are, however, not seen in the "Mal de Caderas."

The Parasite.

Dr. Schneider (*Recueil de Médecine Vétérinaire*, 30th April 1903), who studied the parasite in dried preparations of blood, differentiated it from dourine by its being of a larger size, the larger number of granulations in the protoplasm, and being more numerous in the blood. A short time afterwards I had an opportunity of seeing it in fresh blood in a living state.

The evolution of the parasite does not appear to differ from that of surra or nagana.

The surrounding conditions of the place on the confines of the desert, and in a bad climate, made anything like experimental work exceedingly difficult, but I successfully inoculated grey mice, a dog, and jumping hare (jerboa).

In mice, the period of incubation was from ten to fifteen days, death taking place in fifteen to twenty days from the appearance of the first symptoms, and the same with the jerboa. In these animals, however, there were fewer parasites in the blood.

The dog appears to have greater power of resistance, one that was inoculated on 12th April being alive on 16th May.

(*Bulletin de la Société Centrale de Médecine Vétérinaire*, 30th Sept. 1903.)

LACTATION IN MALE LAMBS.

BY W. G. BUTLER, V.S. INSPECTOR, B. A. I. EAU CLAIRE, WIS.

EIGHT large, very fat, male lambs, averaging 110 lbs. each, probably five to six months old, killed at the abbatoir at which I am inspector, had milk-secreting udders. In some the glands at the base of the teats consisted in a circumscribed well-rounded body about 2 inches in diameter, the teats being large and well developed. The teats and udder were well filled with milk of a natural colour and consistency. In others the teats smaller, with the udders less developed, but in all there was a marked condition of lactation. These lambs all came from the same farm, were of Shropshire breed, and had been well fed with grain in addition to nursing their mothers. I do not know the exact age at which they were castrated. This peculiarity in the male may not be so rare, but to me it is quite interesting, as I had never before seen or heard of such a number of animals together showing a like condition.

(*American Veterinary Review*, October 1903.)

AMONG THE COLLEGES (U.S.A.).

THE announcement comes to us of the probable closing of the Veterinary Department of M'Gill University for want of adequate pecuniary aid. This, the second closing of Eastern institutions, comes as a serious blow to veterinary educational progress in America. It is peculiarly distressing and painful to those who have, in season and out of season, urged higher veterinary education. The work at M'Gill—formerly the Montreal Veterinary College—has ever been under the direction and care of Professor D. M'Eachran, and the work of that institution will ever remain a monument of honour and esteem to his unselfish devotion for the advancement of his chosen vocation. In times of depression and adversity, in the periods of the multiplication of mushroom veterinary colleges, from a thoroughly scientific course graded over a period of three years, this institution never wavered from its high sense of responsibility as an educational institution. When its income from student fees was meagre and insufficient for its maintenance, the willing hand and open purse of its chief director carried it along and schooled its matriculants in the same manner as in other years, and it can be well and truly said that

every graduate from that institution bears generous testimony to the good work so well done. In conclusion, may we not properly ask Canada, with her enormous live-stock wealth and industries, not to see this institution close for want of financial support? What will the Province of Manitoba do for future additions to the profession, in that no other college graduates of Canadian institutions are eligible to practise in her Province?

(*Journal of Comparative Medicine and Vety. Archives.*)

THE VETERINARY PROFESSION IN JAPAN.

THERE are fourteen Veterinary Schools in Japan:—

(*a.*) The Veterinary Institute and Faculty of Agriculture of the Imperial University of Tokio. This Institute was founded in 1877. In 1886 the School of Forestry was united to it, and it was designated the Academy of Agriculture and Forestry of Tokio. It is, however, now attached to the Imperial University of Tokio, under the Minister of Public Instruction.

(*b.*) Five superior veterinary schools ranking as academies:—

1. At the Agricultural College at Lapporo.
2. The practical course of Komaba at the Imperial University of Tokio.

(*c.*) Eleven secondary institutions at the Agricultural Colleges in the provinces of Miyaghi, Ivate, Avomori, Ishikava, Osaka, Okayama, Yamagashi, Komamoto, Oita, Miyasaki, and Kagosima.

There is also a military veterinary school and a private college at Tokio, and this year a new one will be opened in the province of Ivate.

There are 4258 veterinary surgeons in the Empire, 2545 are regularly qualified men, 1713 are registered practitioners, but have not diplomas.

(*Fortschrifte der Veterinar Hygiene.*)

[*Note.*—There are 3365 names on the register of the Royal College of Veterinary Surgeons for 1903.—ED. *V. J.*]

HORSES ON THE WEST COAST OF AFRICA

IT is generally considered that horses are unable to live on the West African Forest Belt, although at Accra and in the open country to the east they do well. In the interior Hinterland, which is high lying, horses are bred in considerable quantities. Since the British occupation of Kumassi a certain number of horses have been imported by the officials, there being now eighteen in the place.

Sir M. Matham, the Governor of the Gold Coast, has forwarded some information on the subject to the Colonial Office from which it appears that three have died. The animals are described as "wasting gradually away until they were nearly skin and bones," the remainder are stated to be thriving. The reports say that with proper stable management and sufficiency of food there is no reason why horses should not live in Northern Ashanti.

TO OUR READERS.

Being fully aware that a thorough knowledge of all the diseases of Mammary Glands is of vital importance to human beings, we have obtained the plates and copyright of this admirable work, and Lieut.-Colonel Nunn has kindly undertaken its translation into English. We published the first portion in June 1902, *and this portion concludes the work, which shall afterwards be published in book form.*

DISEASES OF THE MAMMARY GLAND.

BY P. LEBLANC, LYONS VETERINARY COLLEGE—TRANSLATED BY LIEUT.-COLONEL NUNN, A.V.D., F.R.C.V.S., ETC.

(*Continued from page* 217.)

BITCH.—BENIGN CONNECTIVE TISSUE TUMOURS.

I.—ADENOMATA.

Under the name "Adenomata" we class tumours formed of gland structure, without it, however, being exactly reproduced.—(Delbet.)

They are rare amongst the domestic animals. We only know of one case, reported by Stockmann, in a goat with metastasis in the lungs.[1]

In the human being they are found in the breast, and are surrounded by a fibrous capsule. The gland is enlarged, but there are no indurated centres or cysts.—(Fig. 25.)

II.—ADENO FIBROMATA.

These tumours are common in the bitch, but rare in other animals. They are mentioned in most works on pathology, but the first good account is by Professor Peuch in 1869.[2]

The same author has edited the article on "Mammary Tumours" in St. Cyr and Violet's Veterinary Obstetrics.

Kitt and Vennerholm also mention them, the former one in the left side of a mare that weighed 12 kilogrammes. Usually only one quarter is affected, but others possibly may be. The tumour varies in size from a hen's egg to that of the clenched fist, or even larger, and this usually is the case where two glands are attacked. The line of demarcation is very distinct, and they are encapsuled. From their weight and position they become pedunculated and moveable, swinging about under the abdomen when the animal moves; on this account they are exposed to contusions giving rise to ulceration and suppuration.

Adeno fibromata have always a firm feeling, although there is a variety in which the basement membrane is not, strictly speaking, fibrous, but composed of connective tissue, such, without being actually soft, are less resisting.—(Fig 26.)

[1] Journal of Comparative Pathology and Therapeutics, 1895, page 254.
[2] Peuch. Tumours of the Mammæ in the Bitch. Journal de Lyon, 1869, page 2.

In some cases the surface is rounded from the formation of cysts in the structure. On section the surface is greyish or yellow, fibrous in places where the trabeculæ are divided across, with yellow or brown points of pigment scattered about. If there are cysts the cavities are round, the walls pliable, and containing a transparent viscid fluid of a dark yellow or brown colour secreted by the lining epithelial cells.

Histologically they show large fibrous trabeculæ passing between the cavities which contain blood-vessels. The glandular cavities are lined with epithelium and are of various shapes, some being bifurcated or even multiple at their blind extremities. They may even be stellate, with a variable number of arms.—(Fig. 26 and 27.)

(A.)—*Fungoid Adeno Fibromata.*

Microscopically these tumours have all the general characteristics of adeno fibromata, of which they are a variety. Cysts are formed at numerous points, and in the tissue surrounding them more or less voluminous vegetations, which cover the walls with granulations that may be oval or round, ramified, or arborescent, but these are only seen in the larger, the lining of the smaller ones being smooth. They contain a yellow or brown fluid, and the primary granulations frequently have secondary ones growing from them. The size of the cyst affords an indication as to the age of the lesion.—(Fig. 28.)

Microscopic examination shows an abundant fibrous stroma with blood-vessels, and the existence of glandular cavities of variable dimensions, the walls of which are covered with epithelium that throws out prolongations. These intercystic granulations are pedunculated, and there are usually several in the same cyst filling it up. The cavity also contains epithelial cells—red blood corpuscles and leucocytes, and sometimes small hemorrhagic patches on the walls.—(Fig 28.)

(B.)—*Myxo Adenomata.*

This form of adeno fibromata is softer than any of the foregoing on account of the slight difference in the stroma. The gland is hypertrophied, cuts easily, and the incised surface is less opaque than the adeno fibromata. Cysts do not form, they are encapsuled, and they are not so common as the former.—(Fig. 29.)

They are formed of mucous tissue in which are a small number of glandular neoformations, the stroma containing stellate cells that anastomose with each other, as well as a number of round or elongated ones.—(Fig. 30.)

The glandular cavities vary in size, some being lined with stratified epithelium, in others this is wanting.

III.—FIBROMATA.

The characteristics of the fibromata are that they are composed of fibrous tissue—that is to say, that the connective tissue has attained its highest degree of development. Fibromata of the mammæ are either circumscribed or diffused. The latter are not rare, but for the most part should be classed as adeno fibromata, as with the proliferation of the connective tissue an epithelial neoformation is also in existence. In some degree they have a traumatic or irritative origin, as we know that chronic irritation of the generative track in females will give rise to condyloma. These tumours in the mammæ are encapsuled and clearly circumscribed. They are hard and elastic, and their surface is generally smooth. On section the surface is greyish or yellowish-white with concentric fibrous bundles, sometimes parallel and sometimes irregularly matted together.

The cut surface is sometimes slightly lobulated, at others perfectly flat and smooth and dry.

Histological Characteristics.—The fibromata are formed of undulating bundles of connective tissue arranged in a more or less irregular manner, with a few flat cells between them, but with few blood-vessels. Sometimes the fibres are arranged in a concentric circular fashion.

In some cases the centre of the tumour undergoes mucoid degeneration, being infiltrated with mucine, and becomes softened, when it is known as a "Mucoid Fibromata," in others the fibrous tissue is associated with mucus. They may be the subject of fatty or calcareous degeneration, and it is not uncommon to see them ulcerated from blows and injuries when situated on the mammæ. Fibromata do not greatly increase in size, but their excision is called for if they ulcerate.

IV.—MYXOMATA.

Myxomata are not common on the mammæ. Lucet has seen a case in a six year old bitch that had a large pyriform tumour on the third mammæ, 14 inches in length and 18 inches in circumference, weighing over three pounds, its surface being excoriated and irregular. It was easily removed, and was found to be a myxomata. Cultures revealed the presence of micrococcus pyogenas albus.[1]

The myxomata are composed of mucous tissue, and are soft and flabby, white or yellowish-white in colour, and in the mammæ are rare. They are either circumscribed or diffused, and in the latter case there is epithelial proliferation of the same nature as characterises the myxo adenomata. They are rounded, mobile, and pedunculated, the surface being smooth and slightly lobulated. There is usually a capsule of connective tissue surrounding them. On section they are of a white semi-translucent colour, and in some cases irregularly lobulated.

[1] Lucet. Recueil, 15th May 1896, page 290.

The cut surface is bathed in a colourless slightly viscid liquid, and they are likely to undergo fatty degeneration.

Histological Appearances.—In pure myxomata, in the substance of a transparent amorphous basement structure are a number of round or branched cells, the latter being the most characteristic. They contain oval or rounded nuclei, with prolongations that often anastomose with the neighbouring ones, and the nutrient vessels ramify in the septa.—Fig. 30, if the glandular spaces are eliminated, gives a good idea of the myxomata.

They are usually benign, but if diffused may be recurrent.

V.—LIPOMATA.

Lipomata of the mammæ are not common. Stockfleith has described them in the bitch, and according to him they are small, lobulated, and somewhat fluctuating. They are generally situated in the subcutaneous cellular tissues between the skin and mammæ, rarely between the muscles and the gland; being benign they cause but little inconvenience.

They usually are of traumatic origin; small injuries constantly repeated being a frequent cause, as we know the mammæ of the domestic animals are very subject to such. In the human being this is a common cause, as on the back of the neck with porters, in the subclavicular regions with millers who carry flour sacks on their shoulders, and the lumbo-sacral with people who wear trusses.

They are generally round or oval, clearly delimitated, easy to enucleate, and the surface is smooth. They are of a white colour, and vary in size. They are soft in consistence, particularly when *in situ*, and the cut surface is flat, white, and shining, with an oily feeling to the finger. Scattered through the mass are a number of bands of connective tissue that divide it into lobules.

The microscopic characteristics of the lipomata are those of adipose tissue, with septa of connective tissue dividing the mass of fat cells into lobules. In certain cases there is a membrane dividing the individual cells, but generally they are in contact with each other, each appearing like a clear rounded mass, limited by a membrane with a nucleus in the wall.—(Fig. 31.)

VI.—CHONDROMATA.

Chondromata of the mammæ have been specially studied in the bitch. M. Peuch recorded a case in 1870 where the third and fourth glands on the right side were involved, the tumour being 5 cm. by $1\frac{1}{2}$ cm., hard, lobulated, painless, of the consistency of cartilage, with a large adherent base, and engorgement of the adjacent lymphatics. On examination it was found to be undergoing ossification, and, in places, fatty degeneration.[1]

[1] Peuch. Note on Mammary Sarcoma, and a case of Chondroma in the Dog. Journal de Lyon, 1870, page 107.

Generali[1] records a case that developed in a month.

The lungs and kidneys contained numerous tumours of various sizes, some undergoing calcification. In the Pons Varolia one was found as large as a hazel nut, which had caused absorption of a large portion of the brain tissue. For a fortnight the animal had been subject to epileptic seizures, which gradually became more frequent. During the attack there were convulsive movements of the jaws with salivation, extension of the head on the neck, and rolling of the eyes. The patient fell on the ground "always on the left side."

Chondromata are of slow growth, seldom generalised, and are composed of recently formed cartilage disposed in lobules of variable size. In the cases under consideration the presence of embryonic cartilage may be put on one side, as it is difficult to see how it could affect the mammæ.

The whole of the gland can become affected, the surface being smooth and slightly lobulated, and on pressure it feels firm and slightly elastic. On section the surface is of a bluish-white colour, and the bulb is made up of hyaline cartilage with a small quantity of fibrous tissue arranged in more or less regular lobules, that are joined together by trabeculæ of greyish coloured connective tissue. The cut surface is flat, smooth, and slightly moist. In places there may be seen a cartilaginous network permeated by fibrous tissue in which are located very small cystic cavities containing a brown or red-brown fluid. True cysts are also sometimes seen with a number of either simple or cartilaginous growths on the lining membrane projecting into the cavity.

Histological Appearances.—Isolated masses of cartilage are found scattered irregularly through the tumour of variable size, round, oval, or sometimes very irregular in shape, with the remains of fibrous tissue running through them that disappears in the process of chondrification. The cartilaginous cells are scattered irregularly except on the edges of the isolated masses, where they are arranged concentrically; they are of considerable size, round or oval. At the edges of the cartilaginous zones blood-vessels, sometimes of a considerable size, are seen.

In some cases there are cartilaginous prolongations in the fibrous tissue, and in the septa that divide the larger lobes the gland tissue has disappeared, it being exceptional to find a few small collections of atrophied epithelial cells, which are completely surrounded by the cartilaginous formation.—(Fig. 32.)

In places where there are true epithelial proliferations the blood-vessels are large. The alveolæ are either simple or compound, filled with proliferating epithelium, and resemblance to the adenomata is most marked, so much so that these tumours have been designated adeno-chondromata.

[1] Generali. Metastic Enchondroma of the Pons Varolia in the Dog. L'Ercolani, April 1892.

A curious feature is the tendency to ossification seen in the epithelial islets and interglandular fibrous tissue; but this is not complete or a true bony deposit. The same is observed in the cartilaginous lobes.—(Fig. 32.)

Malignant Tumours.

I.—Epitheliomata.

Epitheliomata are common in the dog, Cadiot having seen eleven out of nineteen cases, and Fröhner states that *cancer* is the most common of all the mammary tumours. They vary from the size of a hazel-nut to a child's head, are regular in shape, sometimes hard and lobulated, sometimes fluctuating at one spot, the centre. The skin frequently is intact, or only distended, but there may be ulcers formed, the result of injuries from which fœtid pus is discharged.

The base is deeply adherent, and the neighbouring lymphatics are almost always involved. The general state of health is not affected in the earlier stages until metatastic complications arise. Fröhner has, however, several times observed septic endocarditis.

General Characteristics. — Epitheliomata have certain special characteristics. Cornil and Ranvier designate certain tumours of glandular origin under this designation, and we have noticed that portions of them may present some of the appearance of carcinomata or adenomata. The surface is irregular, lobulated, and adherent to the skin; it is soft and of a yellowish white colour on section, the surface being covered with a certain quantity of fluid containing epithelial cells.

The tumour appears to develop by proliferation of the epithelium of the mammary acini, which send out offshoots that invade the connective tissue, which form round them, dividing them off into isolated islets.

Microscopic Appearances.—Under a low power a tolerably regular division of the cellular masses is seen, which is independent of the connective tissue surrounding the alveoli (Fig. 33), but generally this connective tissue is not very greatly developed. The epithelial cells have a tendency to arrange themselves in circles, or more or less rounded, but not in any very large masses.

Under the high power the mass of cells will appear concentrated into the cavity of the alveoli, but this is due to the action of the alcohol in which the specimens have been preserved, but in the fresh state they are in contact with the walls.—(Fig. 34.)

These masses of epithelium are formed of large polygonal cells that are in contact with each other, those on the outside being somewhat flattened. This formation is characteristic of the epitheliomata; in the carcinomata, on the contrary, they are apart. Scattered here and there through the tumour are portions where

the acini can be recognised, the epithelium being only slightly hypertrophied. The basement connective tissue contains a number of blood-vessels.

Cadiot, Gilbert, and Roger mention the existence of a clear exudate in the centre of the epithelial masses containing degenerate cells, without any nuclei.[1]—(Fig. 35.)

II.—CARCINOMATA.

Carcinomata are much less frequent in the dog than epitheliomata. Peuchen has described three varieties, and Vennerholm states that the most common are the encephaloid and scirrhus carcinomata.

Pflug relates a case in a bitch. The patient was fifteen years old, and the tumour, the size of a child's head, involved the posterior gland on the left side and the three on the right. It was operated on without trouble, the wound readily healing. The animal died fifty-four days afterwards, and post-mortem examination disclosed secondary growths on the liver, spleen, lungs, brain, mesentery, bladder, and kidneys.[2]

Morey and Carougeau report a case in a bitch eight years old, in which the first mammæ on the left side was involved, and rapidly increased in size, the neighbouring lymphatic glands also being infected. The base of the tumour was diffused, and the surrounding tissues being invaded; on section exit was given to a large quantity of bloody serum.

Sections were cut from parafine mountings stained with hematoxyline and picro-carmine. The sections had the characteristic cavernous appearance. The septa were very thin, straight, or slightly undulating, and formed of a few fibres supporting blood-vessels. The cavities enclosed by these septa were of various dimensions, the smallest being at the outer part of the neoplasm, and getting larger towards the interior, where the field resembles a large mosaic of cells, with the *débris* of fibres from the broken down septa. The perfect alveoli contain round or polyhedral cells, separated from each other, and which do not entirely block up the space. The tumour was in active growth, the neighbouring tissues being infiltrated.[3]

Secondary tumours were found in the lungs.

Both carcinomata and epitheliomata come under the classification of cancers, which is a clinical definition applied to malignant tumours generally, but strictly speaking carcinomata should come under the heading of epitheliomata as their structure is partly epithelial. Carcinomata of the mammæ are hard, and may be of a

[1] Cadiot. Elements of Surgical Pathology. Paris, 1899, page 588.
[2] Pflug. Cancer of the Mammæ and Metastasis in various organs in the dog. Zeitsch. für Vet. Viss. de Pütz.
[3] Morey and Carougeau. Encephaloid Carcinoma in the Dog. Journal de Lyon, April 1898, page 210.

considerable size, not encapsuled, but adherent to the skin, which it may even invade, and from which it is not possible to remove it or wrinkle it on its surface. The skin is often deeply corrugated, and covered with round or oval ulcers that granulate at the bottom. On section a certain quantity of fluid exudes, containing various forms of epithelial cells. The section shows a number of grey or yellow masses, separated from each other by septa of connective tissue of a greyish-white colour; rarely there are cysts.

Histological Appearances.—The growth consists of a number of alveoli, containing epithelial cells, bounded by stroma formed of fibrous or connective tissue.—(Fig. 36.) The consistency of the tumour depends on the quantity of connective tissue present, and is the difference between encephaloid and fibrous carcinomata. The latter are also known as scirrhous cancer, and the amount of fibrous tissue is relatively greater than the epithelial cells, but an encephaloid carcinoma may become fibrous. In carcinomata that have a tendency to spread, there are a few connective tissue stroma, through which blood-vessels run delimitating the alveoli; these frequently communicate with one another.—(Fig. 36.)

In certain cases the alveoli contain no cells or are only partly filled, also the septa may be infiltrated with them; particularly is this the case when the tumour is growing. It should also be noticed that the alveoli communicate with the lymphatics, which facilitates the generalisation of the growth.

III.—CONNECTIVE TISSUE TUMOURS.—SARCOMATA.

Sarcoma of the mammæ is not so common as epithelioma, Cadiot having encountered it in six out of nineteen cases. Vennerholm states the possibility of ossification or the formation of cysts.

In 1870 Peuch published the following excellent description of them in St. Cyr and Violet's Obstetrics:—"They are larger than the adenomata, and vary in consistency, being in places soft and fluctuating, with cysts that contain a yellow, red, or dark-brown fluid, rich in mucine and albuminoids.[1]

From a clinical point of view sarcomata are large, round, and adherent at the base, throwing out rounded projections into the neighbouring tissues. They are often ulcerated, the bottoms of the ulcers being covered with dark granulations bathed in sanious pus, and which readily give access to putrefactive organisms that cause septicæmia. Usually the neighbouring lymphatics are complicated.

Peuch describes fasciculated, mucoid, and encephaloid sarcoma.[2]

Cadiot twice reports fusiform, three times round-celled, and once osteoid sarcoma. "In the latter the tumour was formed by

[1] Peuch. Notes on Mammary Sarcoma in the Bitch. Journal de Lyon, 1870, page 107.

[2] Peuch. Mammary Tumours. Traité d'obst. vét., 2nd edition, St. Cyr and Violet, p. 1150.

the glandular *cul de sacs*, with hyaline cartilage and osteoids, canaliculi were seen, but were much fewer than in normal bone.[1]

Cadéac reports a case in a bitch. The posterior gland was involved, and rapidly increased till the tumour weighed seven pounds. It dragged along the ground and became ulcerated. The animal was operated on, but died a few hours afterwards, post-mortem examination disclosing granulations on the mitral valves. The tumour proved to be a fungoid sarcoma.[2]

They are nodulated, freely moveable under the skin, to which they do not adhere, and usually the line of demarcation is very clear, but at the base other tissues may be invaded. They are generally round-celled or fusiform, but both varieties may exist in the one tumour. Pressure may cause the skin to ulcerate, and these are filled with soft red granulations, which may mortify and turn yellowish-green, giving off a putrid smell. Round cell sarcomata are soft, and osteoid hard to the touch, the fusiform being between the two in consistency, and at the periphery, especially in the round-celled variety, it is not uncommon to find small cysts containing a yellow or reddish-brown viscid fluid.

Microscopic Appearances.—1. *Round-Celled Sarcomata.*—This is somewhat a misnomer, as the cells are not always perfectly circular; they more resemble epithelium, only the angles are not so sharp and acute. They vary in size, a few giant ones being present. There is a nucleus and nucleolei usually in the centre.

The cells form masses lodged in the alveoli, and in some cases infiltrating the stroma. The blood-vessels are numerous. In places the growth may take on the characters of an adenoma, but if it recurs after operation this change is not again seen.

2. *Fusiform Sarcoma.*—In this variety, although the majority of the cells are fusiform or spindle shaped, round ones are scattered through the mass.—(Fig. 37.)

The fusiform cells are in opposition to each other, and arranged in bundles, sometimes looking like involuntary muscular fibres. The cells vary but little in size, and the stroma are largely developed.

3. *Osteoid Sarcoma*, also known as osteo sarcoma. The process of ossification is not complete, as it is only found at certain points, and there are neither Haversian canals nor canaliculi.—(Fig. 38.)

The fusiform sarcomata generally undergo this change, the bony structure being scattered about in isolated patches.—(Fig. 39.)

[1] Cadiot. Eléments de pathologie et de Clinique. Paris, 1899, page 591.
[2] Cadéac. Fungoid Sarcoma of the Mammæ. Journal de Lyon, 1900, page 399.

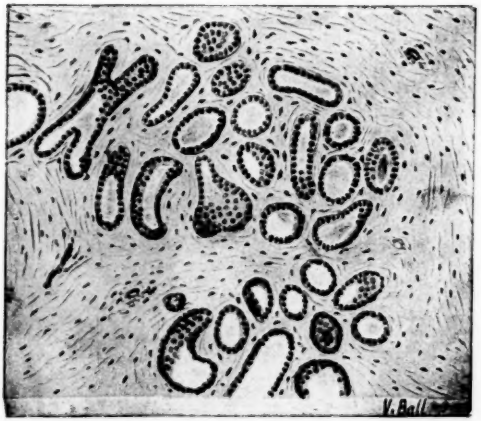

FIG. 25.—Adenoma of the breast.

FIG. 26.—Adeno-fibromata of the mammæ.

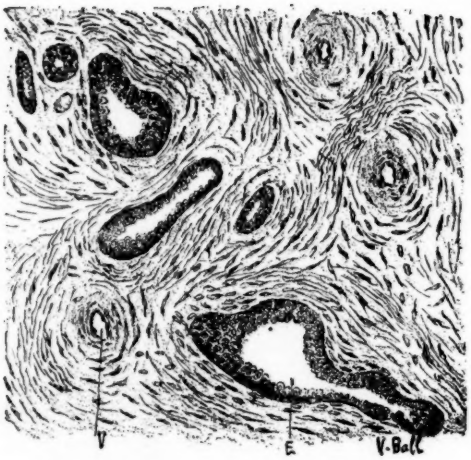

FIG. 27.—Adeno-fibromata. (High power.)

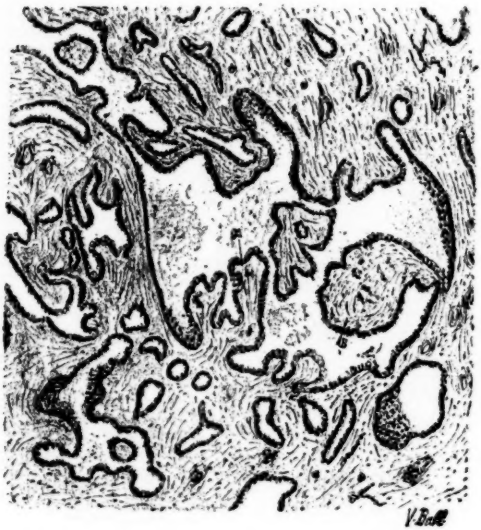

FIG. 28.—Fungoid adeno-fibromata. (Low power.)

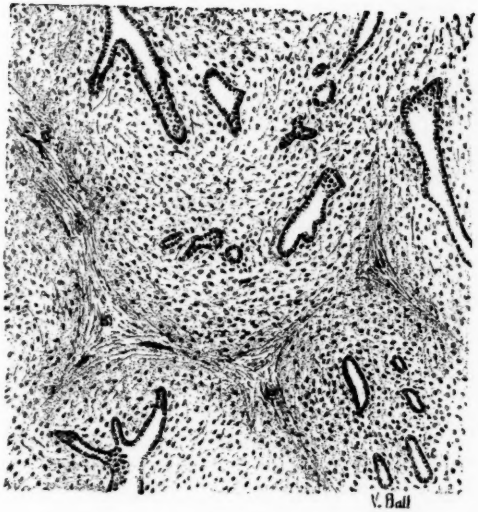

FIG. 29.—Myxo adenomata. (Low power.)

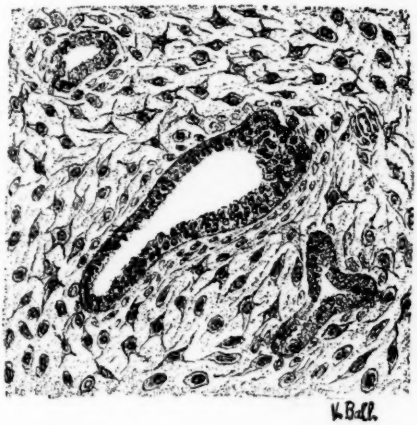

FIG. 30.—Myxo adenomata. (High power.)

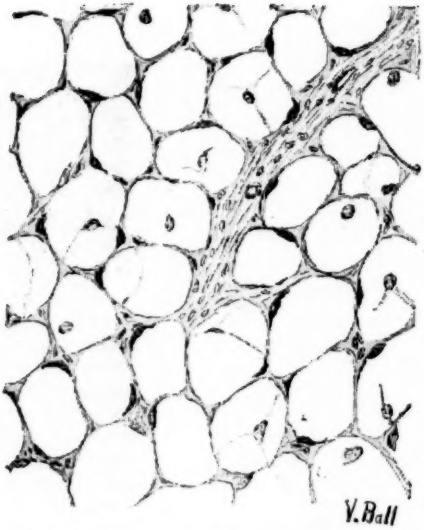

FIG. 31.—Lipoma from the mammæ of the dog.

FIG. 32.—Chondromata of the mammæ.

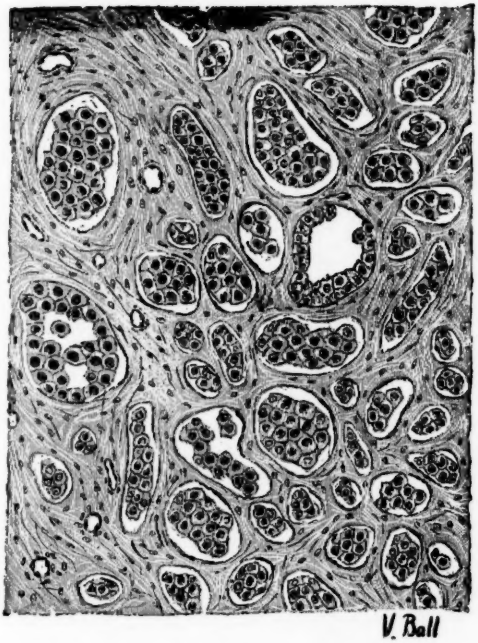

FIG. 33.—Epithelioma of the mammæ.

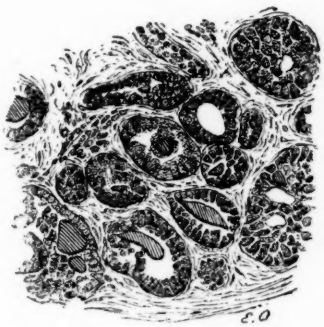

FIG. 34.—Epithelioma of the mammæ, showing hyaline substance in the centre of the alveole. (After Cadiot.)

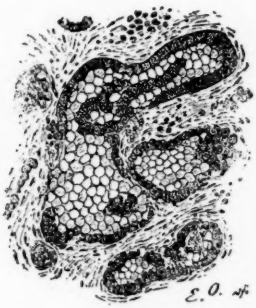

FIG. 35.—Epithelioma of mammæ. Necrobiosm of cells in the centre of alveole. (After Cadiot.)

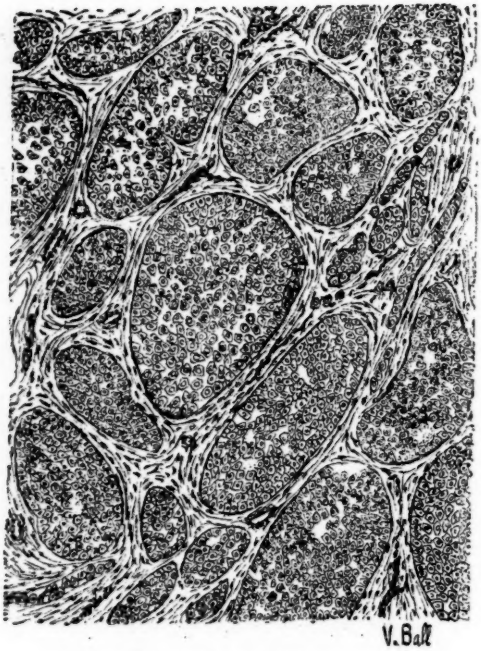

FIG. 36.—Carcinomata of the mammæ.

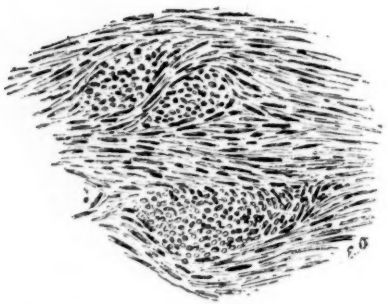

FIG. 37.—Fusiform called sarcoma of the mammæ. (After Cadiot.)

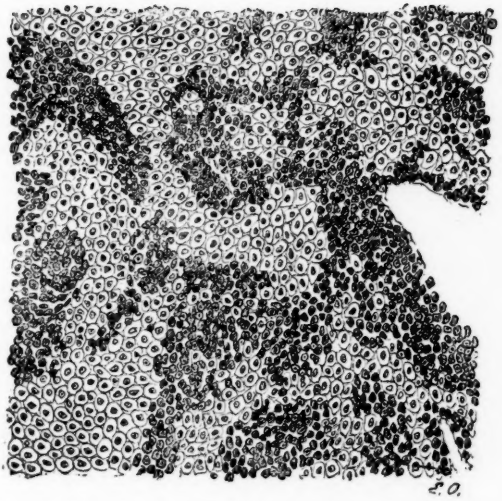

FIG. 38.—Chondroid sarcoma of the mammæ. (After Cadiot.)

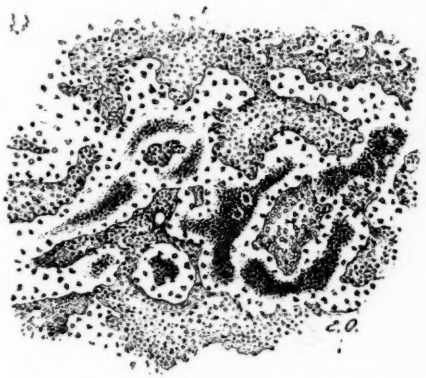

FIG. 39.—Osteo sarcoma of the mammae. (After Cadiot.)

Legal News.

By Guy H. Guillum Scott, Barrister-at-Law.

THE CATTLE MAIMING CASE.

At the Staffordshire Quarter Sessions, before Sir Reginald Hardy and a bench of Magistrates, George Ernest Thompson Edalji, a Birmingham solicitor, was charged with maliciously wounding a horse, the property of the Great Wyrley Colliery Company.

Mr. Disturnal and Mr. H. Harrison prosecuted for the Crown, and Mr. Vachell and Mr. Gaudy appeared for the prisoner.

In opening the case the prosecution pointed out that there had been altogether seven cases of cattle maiming in the Great Wyrley district between February and June, and he called evidence to show that on the night of the crime prisoner was seen out after 9.30, and that foot-marks corresponding to the prisoner's were traced from the field where the horse was killed up to the vicarage. It was also proved that the prisoner's clothes were stained with mammalian blood, and that particles of horse hair of a colour similar to that of the animal killed were adhering to them.

In addition to these facts, there were certain anonymous letters and post-cards which, it is alleged by the prisoner, were written by a boy named Greatorex, and which tended to show that prisoner was not responsible for the outrages. Mr Gurrin, the expert in handwriting called by the prosecution, stated that he was satisfied from the examination he had made, that these letters were written by the prisoner himself, and it was also proved that the anonymous letters ceased directly the prisoner was arrested.

The prisoner, in his defence, denied the charges, and called evidence to prove that on the night in question he never left his bedroom, and that it was not true that his clothes were found in the condition described by the witnesses for the prosecution.

The chairman, in summing up the case, said that it was impossible to over-estimate the importance of detecting the perpetrator of such outrages, and commented on the fact that no apparent motive had been disclosed for the commission of such crimes.

The jury, after a deliberation of fifty minutes, found the prisoner guilty, but recommended him to mercy on account of his position. He was sentenced to seven years' penal servitude.

DISPUTED OWNERSHIP OF SPORTING DOGS.

An important judgment was given by his Honour Judge Beresford at the South Molton County Court as the result of an interpleader action, in which the Bovine Company, dog biscuit manufacturers, of London, and Mrs. Charlotte Jackson, of Cresswell, Mansfield, were the execution creditors; Mrs John Lee Bulled, wife of a trainer of sporting dogs, of Witheridge, the defendant; and A. J. Mildon, county surveyor for the Tiverton district; Frederic Davy, porter, of Tiverton; and John Leach, farmer, of Thelbridge Cross, near Witheridge, the claimants. Mr. B. T. James appeared for the Bovine Company, Mr. W. H. Martin for Mrs. Jackson, and Mr. W. T. Watkins for the claimants. The debts, for which execution was levied on dogs in defendant's possession, and which claimants

contended were their property, were £22 : 4s. in the case of the Bovine Company, and £2 : 10 : 6 in the case of Mrs. Jackson. Mr. Watkins explained that in May the bailiff of the court, acting under a judgment obtained by the Bovine Company against Mrs. Bulled, seized certain dogs. Notice was given by defendant and her husband that the dogs did not belong to them, but to other persons for whom Bulled was breaking and training them. The persons levying the execution were asked by the registrar whether they persisted in their levy, and he received instructions to proceed. An action was then brought, in which John Lee Bulled was the sole claimant of the dogs, but his Honour dismissed it with costs, holding that the particulars were not sufficiently full to give the parties a proper explanation as to who the owners and the claimants of the dogs were. The judge made a further order, that if £35 was paid into court the dogs, then in the custody of the court, should be handed back to claimants, and the matter brought before him on the present issue. In every instance the particulars now set out as fully as possible the exact nature of the claims of each of the parties. The execution creditors, however, persisted in their action, and the only issue was whether claimants were the true owners of the dogs or not.—Mr. Mildon said that for years he had had transactions with Bulled, chiefly as to pointers and setters. The two dogs he claimed were obtained as puppies by exchange in 1902 with Bulled, who at the time of the seizure had them to train for witness.—John Lee Bulled confirmed this, and added that, as he had no money in 1902 to go to Scotland to fulfil a hiring engagement, he endeavoured to borrow from Davy. The latter, however, would not lend him money, but brought four puppies for him (Bulled) to train. Leach also had four puppies in November 1901, for £12, which was owing him on the account between them.—Davy, Leach, and Mrs. Bulled confirmed this.—F. Moore, sub-bailiff, said Mrs Bulled refused to tell him to whom the dogs that were seized belonged. Leach told him that four of the dogs belonged to him, but would not give any particulars. No owners sent any claim until the action was started.

The judge said the claimants had proved their right to the dogs. The bailiff had discharged his duty in levying the execution on the instructions of the Bovine Company. It was not part of his duty to ascertain to whom the dogs belonged; to do that the matter must be brought to the court. The evidence as to the ownership of the dogs was overwhelming. Bulled had nothing to do with them except to break them for other people, and neither he nor Mrs Bulled was the owner of the dogs. The money which had been paid into court must be paid out, and the claimants were entitled to their costs. In answer to Mr James, his honour said there was no order about damages. If there was any remedy it would be against the Bovine Company, which he thought had got off very well in not having an action against them for damages.

(From *The Field*, Oct. 24, 1903.)

WRONGFUL DISMISSAL OF A SERVANT.

RECENTLY, at Norwich County Court, a labourer sued an employer on a claim for wages. The defence was that the labourer had been discharged summarily for insubordination. According to the evidence, the servant

had sworn at his employer, and had used abusive language to him. His honour, Judge Willis, found for the servant, holding that dismissal without notice would not be justifiable under the circumstances disclosed. He held that swearing at a master was not under all conditions an act of insubordination sufficient to warrant instant dismissal. It is, of course, reasonable to hold that a servant does not quite deserve instant dismissal for conduct of this kind. On the other hand, the position of any employer of labour might become intolerable if it were permissible for his hands to volley oaths and personalities at him, and yet be held to be quite subordinate to duty while thus conducting themselves. This case calls to mind another in which a claim was made for wages after summary discharge for alleged insubordination. It was not in dispute that the *employé* in a fit of temper flatly refused to allow his master to have certain keys of which the servant was custodian, the business of the office being thereby impeded. But it was also admitted by the master that he had just previously uttered some unflattering remarks to his servant, saying in heat and anger, "I hate you; I wish I had never seen your face," thereby himself conducing to his servant's subsequent ebullition of temper. The county court judge held that the master could not take advantage of his own wrongdoing, after thus insulting and irritating his servant, to discharge him for the temporary outbreak of insubordination. The case went on appeal to the divisional court, and the county court ruling was affirmed. A remark of the then Lord Chief-Justice, Sir Alexander Cockburn, during the arguments, may be worth quoting. He said, in effect, "I understand the contention of appellant to amount to this: If a master says to a servant, "Bring me my boots, you scoundrel,' and the servant, in irritation, replies, 'I shall not do so until you speak civilly to me,' the master is justified in then and there discharging the servant for disobedience." From this aspect of the relations between master and servant the superior court then disagreed. That ruling having to some extent put a muzzle upon vituperative employers, it is to be hoped that this latest ruling of Judge Willis will not have the effect of inducing servants to consider that their tongues may be absolutely unbridled so long as they otherwise stick to work.

(From *The Field*, Oct. 24, 1903.)

THE JUROR LIST.

PADDINGTON PETTY SESSIONS, 29TH SEPTEMBER 1903.

THE bench considered the objection of Mr. Ernest Lionel Stroud, of No. 29 Spring Street, to his name being placed on the list of jurors. Mr. Thatcher appeared in support of the objection, and after formal proof had been given that Mr. Stroud was a Fellow and Member of the R.C.V.S., and actually practised as a veterinary surgeon, Mr. Thatcher stated the reasons for such objection, and contended that Mr. Stroud was a registered medical practitioner within the meaning of the Jury Act, 1870. He quoted extensively from the Act itself, and the Charters of 1844 and 1876 and the Veterinary Surgeons Act, 1881, especially laying stress upon the fact that under that Act veterinary surgery was held to comprise the art and science of veterinary surgery and medicine, and that there was no register of veterinary surgeons on the passing of the Jury Act, 1870, but the register

kept according to the charter of 1876, and confirmed by the Act of 1881, brought the case within the exemption clause. The bench inquired whether any other similar objections had been made in other places, and on being told by Mr. Thatcher that a case had come before the Harlesden Bench last week, and was now in process of appeal to the Divisional Court, they decided that the objection should stand over until the decision of the superior court had been obtained.

Reviews.

LES MALADIES DU CHEVAL DE TROUPE. By G. JOLY, Vétérinaire en 1re l'Ecole d'Application de Saumur; with a Preface by M. J. YACOULET, Vétérinaire principal. 456 Pages. 39 Illustrations. J. B. Baillière et Fils, 19 Rue Hautefeuille, Paris. 5 Francs.

"The Diseases of Troop Horses" fills a gap in veterinary literature, and the following points show the great utility of the work:—

1. In all progress there is a tendency to specialise, and isolated descriptions of the pathology of each species of animal are insufficient. The peculiar conditions under which each animal lives and works have an important bearing on the diseases it is liable to. This phase of disease can be studied by the military veterinary surgeon, who is able to follow his patient during the whole of his life, and in many cases confirms his diagnosis by a post-mortem examination, advantages which the civil practitioner is denied. These observations the author has endeavoured to present to the reader in a concise form, together with those that have from time to time been published regarding exotic diseases in the colonies.

2. In the chapter on diseases of the organs of locomotion, Mr. Joly has given a number of well-selected cases, and the conclusions that can be drawn from them, and the same can be said of that on diseases of the digestive organs.

3. Up to the present military veterinary statistics have been made but little use of, but they are of the greatest interest. These show that the larger the number of animals treated so does the death-rate decrease, and that the results of treatment in different armies is directly in proportion to the efficiency of its veterinary department.

Chapters are given on strangles, epizootic lymphangitis, typhoid affections, horse-pox, pustular dermatitis, diseases of the intestines, colics, rupture of the spleen and œsophagus, over-work, rheumatism, skin diseases, diseases of the locomotive system, broken knees, lameness of the shoulder and hip, sprain of the fetlock and tendons, fatigue ostitis, fractures, harness and saddle galls, wounds and gun-shot injuries, veterinary statistics, exotic diseases, diseases of the camel.

The work is one that can be recommended to the Army Veterinary Department, and will be found useful to any one who has charge of a stud of working horses.

ANNUAL REPORT OF THE CIVIL VETERINARY DEPARTMENT IN INDIA FOR 1902-1903.

The annual administration report of the Civil Veterinary Department in India for the official year of 1902-03 was published on September 14,

and a mere glance at the table of contents shows the variety of the work performed in that country from horse fairs to veterinary colleges and bacteriological laboratories.

Since the report was written horse-breeding has been taken out of the hands of the Civil Veterinary Department, and an Army Remount Department been formed, the officials being combatant officers of the Indian Army, with a certain number of army veterinary surgeons, who, however, only act in a professional capacity. How the experiment will turn out we are more than doubtful, as we are old enough to remember the scandals of the former "Stud Department" which was run on an Imperial scale, but which was not able to put a troop horse into the ranks under £250 in English money, and we much fear that in about fifteen or twenty years' time we shall see a commission or committee sitting on the newly formed Indian Remount Department. We trust not, "but we have our doubts."

The Government cattle farm at Hissar, in the Punjab, has been taken over by the Civil Veterinary Department. The farm consists of about fifty square miles altogether, and a large amount is under crops for the food of the animals. The total head of stock on the farm is not given, which appears to be a mistake, but we gather that the herd of breeding cows numbers 700. The farm now appears to pay itself, and it is hoped next year that the books will show a profit. Some twenty years ago, when the superintendent was a combatant officer of Indian cavalry, the deficit was so serious that the Government of India seriously considered the advisability of abolishing the enterprise and selling the land.

Valuable work appears to have been done at the bacteriological laboratories at "Muktaier" in the United Provinces, both in the investigation of diseases and the preparation of anthrax and rinderpest serums, also mallein. We, however, fail to notice mention of veterinary officers of the Army Veterinary Department having been deputed to the "Muktaier" laboratory to undergo instruction in the preparation of such serums. Having an establishment of this sort as well as the Kasauli laboratory near Simla at their disposal, we should have thought that the Government of India would "jump" at the opportunity of getting as many veterinary officers instructed as possible; for even if a certain amount of loss does take place during the couple of months an officer is absent from his station, it would be repaid cent. per cent. hereafter in the event of a big war on the Indian frontier. We trust next year to see that this oversight has been rectified. The discovery that "Dourine" exists in India, and was discovered by Veterinary-Major H. Pran, Principal of the Punjab Veterinary College, is officially confirmed. We regret that a number of Government stallions have become affected. The disease is a serious matter as regards horse-breeding, and in Algeria, Southern France, and certain of the United States has played havoc with this industry.

The veterinary dispensaries and native assistants scattered about the country have done good work, and, last but not least, the veterinary schools and colleges.

The demand for trained natives appears to be growing, and a college is to be opened in Madras. The value of these native veterinary assistants was clearly demonstrated during the South African War, and from the report it seems that they are not only employed in many of the independent native stations, but in East Africa and other places outside British India.

VETERINARY MATERIA MEDICA AND THERAPEUTICS. By Veterinary-Major J. B. MILLS, Indian Civil Veterinary Department, Principal Bombay Veterinary College. 2nd Edition. 87 pages. Government Central Book Depôt, Bombay.

The first edition of this little work was brought out in India in 1885, for the use of English-speaking students at the Agricultural College, Saidapet, Madras, and has been adopted as a text-book at the Bombay Veterinary College.

The classification might, we think, be greatly improved. For instance, we find acidum carbolicum on page 4, lutea acide carbolicum page 66, unguentum acidi carbolici page 103; the antidotes to carbolic acid poisoning are given under the head of acidum carbolicum, page 5, and again, in a separate section, on poisons, on page 24. We think that the whole subject might, with advantage, be under one heading.

We notice a part 1 and part 2 materia medica and therapeutics, but we cannot understand the reason of this division, though we presume that the author must have had one. We certainly would advise the author, in a third edition, to collect everything about a particular drug under the one heading, as the frequent reference to different pages must be puzzling to a native student.

Major Mills makes no mention at page 176 of the use of walnut leaves, or a decoction of them, to keep off flies. A bunch hung up in the door of a building will do a great deal to keep away these pests. In Northern India and Kashmere the muleteers fasten a bunch of fresh walnut leaves into their animals' bridles with this object.

The list of vernacular names of drugs is exceedingly valuable, and the tables at the end useful for reference.

Correspondence.

EPIZOOTIC LYMPHANGITIS.

To the Editor of the VETERINARY JOURNAL.

SIR—With reference to the above disease and its treatment, as reported by Mr. Hodden in the September number of your journal, I have had several cases under treatment in this station, all of which have quite recovered. The treatment consisted first of all of applying the actual cautery (budding iron) deeply to all of the nodules, and afterwards by treating the beasts with antiseptic lotion, hyd. perchlor. 1-1000, which was syringed into each nodule two or three times daily. Internally I gave pol. iodide, two drachms and iodine, ten grains morning and evening, increasing the latter to twenty grains. As flies were very troublesome to the wounds I applied a mixture of iodoform and eucalyptus oil which kept them away, and also seemed to act beneficially to the wounds. All the cases have done remarkably well, and no thickening of the lymphatics of the legs remain, and I have had no recurrent cases.—I have the honour to be, Sir, your obedient servant,

W. J. TATAM,
Capt. A.V.D.

INDIA, *Oct.* 14, 1903.

War Services of Officers of Army Veterinary Department.

DIRECTOR-GENERAL.

Thomson, H. (Col., C.B.)—
Egyptian Expedition, 1882-84.—Action of Kassassin. Battle of Tel-el-Kebir. Medal with clasp; bronze star. Pro. Vety.-Surgeon, 1st Class. Soudan, 1884.—Battles of Teb and Tamai. 2 clasps. Pro. Vety.-Surgeon, 1st Class, ranking with Majors.

LIEUT.-COLONELS.

Glover, B. L., C.B.—
S. African War, 1878-9.—Kaffir Campaign and operations against Sekukuni; Zulu Campaign. Mentioned in Despatches. Medal with clasp; pro. Vety.-Surgeon, 1st Class.
Operations on N.-W. Frontier of India, 1897-8. With Tirah Exped. Force as Inspg. Vety.-Officer. Despatches, *Lond. Gaz.*, 5 April 1898. Medal with 2 clasps.

Matthews, I., C.B.—
Egyptian Expedition, 1882.—Action of Tel-el-Mahuta, the two actions at Kassassin, Battle of Tel-el-Kebir, occupation of Cairo. Medal with clasp; bronze star; pro. Vety.-Surgeon, 1st class.
S. African War, 1899-1900.—Prin. Vety.-Officer. Defence of Ladysmith. Despatches (Sir G. S. White, 2 Dec. 1899 and 23 March 1900), *Lond. Gaz.*, 8 Feb. 1801, and Despatches, *Lond. Gaz.*, 16 April 1901.

Smith, Fred., C.M.G.—
Nile Expedition, 1898.—Egyptian medal. Medal.
S. African War, 1899-1901.—Senior Vety.-Officer Lines of Comm., Cape Town. Despatches, *Lond. Gaz.*, 20 Aug. and 10 Sept. 1901.

Nunn, J. A., D.S.O., C.I.E.—
Afghan War, 1879-80.—Medal.
Operations in Zululand, 1888.
Chin-Lushai Expedition, 1889. — Despatches, *Lond. Gaz.* 12 Sept. 1890. Medal with clasp.

Flintoff, T., D.S.O —
Afghan War, 1879-80.—Medal.
S. African War, 1899-1900.

Pringle, R., D.S.O.—
Afghan War, 1880-81.—Medal.
Mahsood Wuzeeree Expedition, 1881.—Mentioned in Despatches.
Zhob Valley Expedition, 1884.
S. African War, 1899-1900.—Senior Vety.-Officer, Lines of Commn.

Moore, R.—
S. African War, 1879.—Zulu Campaign.—Operations against Sekukuni. Served with the 1st D.G. Despatches, *Lond. Gaz.*, 16th Jan. 1880. Medal with clasp.
Afghan War, 1880-81. — Occupation of Kandahar.

Rutherford, C., C.M.G.—
S. African War, 1881.—Transvaal Campaign.

Lieut.-Colonels (*continued*)—
Bechuanaland Expedition, 1884-5.
S. African War, 1899-1900.—Dist. Vety.-Officer, Natal. Despatches, *Lond. Gaz.*, 8th Feb. 1901.

Lees, K.—
Afghan War, 1880-81.—Medal.

Forsdyke, F. W.—
Afghan War, 1880-81.—Medal.
Operations of the Bozdar Field Force, 1881.
Operations in Chitral, 1895.—With the Relief Force. Medal with clasp.
N.-W. Frontier of India, 1897-98.—Mohmand. Senior Vety.-Officer and Vety.-Insp. Clasp.
Tirah, 1897-98.—Insp. Vety.-Officer Line of Comm. Despatches, *Lond. Gaz.*, 5th April 1898. Clasp.
S. African War, 1899-1900.—Pro. Vety.-Lieut.-Captain.

Hazelton, E. H.—
China Expedition, 1900.—Senior Vety.-Officer. Despatches, *Lond. Gaz.*, 14th May 1901. Pro. Vety.-Major.

Blenkinsop, L. J., D.S.O.—
Nile Expedition, 1898.—Battle of Khartoum. Despatches, *Lond. Gaz.*, 30th Sept. 1898. Egyptian medal with clasp. Medal.
S. African War, 1899-1900.—Despatches, *Lond. Gaz.*, 8th Feb. 1901. Pro. Vety.-Major.

MAJORS.

Philips, J. J.—
Afghan War, 1878-80—Medal.
S. African War, 1899-1900.

Duff-Gillespie, S.—
Afghan War, 1878-9.—Forcing of the Peiwar Kotal, battle of Charasiah, occupation of Kabul. Medal with clasp.
S. African War, 1899-1900.

Savage, J. B.—
Egyptian Expedition, 1882. — Medal; bronze star.

Day, E.—
S. African War, 1899-1900.—Employed with Remounts.

Short, F. J.—
S. African War, 1902.

Griffith, G. R., D.S.O.—
Egyptian Expedition, 1882.—Actions of El Magfar, Masameh, and Kassassin, Battle of Tel-el-Kebir and forced march to Cairo. Medal with clasp; bronze star.
Soudan Expedition, 1884-5.—Nile. Clasp.
Soudan, 1888-91.—Suakin. As Prin. Vety.-Surgeon. Action at Gamaizah. Mentioned in Despatches. Clasp.
Action of Toski. Clasp.
Capture of Tokar, Feb. 1891. 4th class Osmanieh. Clasp to bronze star.
Expedition to Dongola, 1896.—As Prin. Vety.-Surgeon. Operations of 7th June and 19th Sept. Despatches, *Lond. Gaz.*,

Majors (*continued*)—

3rd Nov. 1896. Egyptian Medal with 2 clasps.

Nile Expedition, 1897.—Clasp to Egyptian Medal.

Nile Expedition, 1898.—Despatches, *Lond. Gaz.*, 30th Sept. 1898. 3rd Class of the Medjidie. Granted next higher rate of pay of rank. Clasp to Egyptian Medal. Medal.

Cooper, J.—
S. African War, 1899-1901.

Raymond, R. W.—
Operations in Zululand, 1888.
S. African War, 1899-1900.—Despatches, *Lond. Gaz.*, 8th Feb. 1901. Pro. Vety.-Major.

Moore, J.—
Dongola Expedition, 1896.—With Suakin Field Force. Ind. Contingent. Medal.
S. African War, 1899-1900.—Spec. Serv. Officer (including service with Rhodesian Protectorate Regt.). Despatches, *Lond. Gaz.*, 10th Sept. 1901. Pro. Vety.-Major.

Butler, E. R. C.—
Burmese Expedition, 1885-7.—Medal with clasp.

Fowler, G. C. O.—
Burmese Expedition, 1887.—Medal with clasp.

Sharp, F. W., D.S.O.—
Soudan Expedition, 1885.—Suakin. Medal with clasp; bronze star.
S. African War, 1899-1900.

Taylor, E.—
Burma, 1881.—Wuntho Expedition.
S. African War, 1902.

Richardson, A. E.—
Operations on N.-W. Frontier of India, 1897-8.—With Tirah Exped. Force. Despatches, *Lond. Gaz.*, 7th June 1898. Medal with 2 clasps.
S. African War, 1899-1900.

Walker, W. Reginald.—
N.-W. Frontier of India, 1897-8. Malakand. Action at Landakai. Medal with clasp.

Lawson, E. J.—
Burmese Expedition, 1885-9.—Medal with 2 clasps.
Nile Expedition, 1898.—Egyptian Medal. Medal.
S. African War, 1898-1900.

Drage, F. B.—
Nile Expedition, 1898.—Battle of Khartoum. Despatches, *Lond. Gaz.*, 30th Sept. 1898. Egyptian Medal with clasp. Medal.
S. African War, 1899-1900. Medal with 6 clasps.

CAPTAINS.

Lewis, T. E. W.—
Nile Expedition, 1897.—As Asst. Prin. Vety.-Surgeon, Egyptian Army. Egyptian Medal with clasp.
Nile Expedition, 1898.—As Asst. Prin. Vety.-Surgeon, Egyptian Army. Battles of the Atbara and Khartoum. Despatches, *Lond. Gaz.*, 30th Sept. 1898. Pro. Vety.-

Captains (*continued*)—

Capt. 4th Class Medjidie, and 4th Class Osmanieh; 2 clasps to Egyptian Medal. Medal.

Nile Expedition, 1899.—Operation resulting in final defeat of Khalifa. In charge of Vety. Dept., Flying Column. Despatches, *Lond. Gaz.*, 30th Jan. 1900. 2 clasps to Egyptian Medal.

Larnder, E. W.—
S. African War, 1899-1900.

Newsom, A. C.—
Operations in Chitral, 1895.—With the Relief Force. Medal with clasp.
S. African War, 1899-1900.—Defence of Ladysmith.

Eassie, F., D.S.O.—
Expedition to Manipur, 1891.—Medal with clasp.
Burma, 1891-2-3-4. — Operations in the Chin Hills. Despatches, G.G.O. 733 of 1893. Clasp.
Operations in Chitral, 1895.—Medal with clasp.
S. African War, 1899-1900.

Stratton, F. C.—
Expedition to Manipur, 1891.

Harris, C. B. M.—
Operations on the N.-W. Frontier of India, 1897-8.—With Tochi Field Force. Medal with clasp.
S. African War, 1899-1900.—Vety.-Surg. Inf. Div., Natal Field Force.

Cranford, R. L.—
Operations on N.-W. Frontier of India, 1897-8.—Medal with clasp.

Smith, W. Dunlop.—
Expedition to Dongola, 1896.—Spec. Serv. Despatches, *Lond. Gaz.*, 3rd Nov. 1896; 4th Class Medjidie. Egyptian Medal.
Nile Expedition, 1898.—Battle of Khartoum. Despatches, *Lond. Gaz.*, 30th Sept. 1898. Clasp to Egyptian Medal. Medal.
S. African War, 1899-1900.—Spec. Serv. Officer (including service with Bechuanaland Protectorate Regt.). Despatches, *Lond. Gaz.*, 10th Sept. 1901. Pro. Vety.-Capt.

Sawyer, H. T.—
Operations in Chitral, 1895.—With the Relief Force. Medal with clasp.
S. African War, 1899-1900.—Despatches, *Lond. Gaz.*, 8th Feb. 1901. Pro. Vety.-Capt.

Williams, G. M.—
Operations in Chitral, 1895.—With the Relief Force. Medal with clasp.
Operations on N.-W. Frontier of India, 1897-8.—With Malakand Field Force. As Senior Vety. Officer Utman Khel Column. Operations in S. Bajaur and Mamund country. Also with Buner Field Force. Attack and Capture of the Tanga Pass. Clasp.
S. African War, 1899-1900.—Despatches, *Lond. Gaz.*, 8th Feb. 1901. Pro. Vety.-Capt.

Wilson, F. W.—
Operations on N.-W. Frontier of India,

Captains (*continued*)—

1897-8. — With Tirah Exped. Force. Medal with 2 clasps.
S. African War, 1899-1900.—Despatches, *Lond. Gaz.*, 8th Feb. 1901. Pro. Vety.-Capt. Medal with 4 clasps.

Peacocke, T. G.—
Operations in Chitral, 1895.—With the Relief Force. Medal with clasp.

Tatam, W. J.—
Operations on N.-W. Frontier of India, 1897-8. — With Tirah Exped. Force. Medal with 2 clasps.
S. African War, 1899-1901.

Rose, C.—
Waziristan Expedition, 1894-5. — Medal with clasp.
Operations on N.-W. Frontier of India, 1897.—Operations on the Samana Range; also with Tirah Exped. Force as Vety.-Officer, 2 Div. Despatches, *Lond. Gaz.*, 5th April 1898. Medal with 3 clasps.
S. African War, 1899-1900.

Axe, H. J.—
China Expedition, 1900.

Martin, E. E.—
S. African War, 1902.

Knight, H. B.—
Operations in Chitral, 1895.—With the Relief Force. Medal with clasp.

Sullivan, H. A.—
S. African War, 1899-1901.

England, A.—
Operations in S. Africa, 1896-7.
S. African War, 1899-1901.—Prin. Vety.-Officer to G.O.C. Impl. Yeo.

Wright, W. N.—
Operations in Chitral, 1896.—With the Relief Force. Medal with clasp.
Operations on N.-W. Frontier of India, 1897-8.—With Tirah Exped. Force. 2 clasps.
China Expedition, 1900.

M'Dougall, W. A.—
Operations on N.-W. Frontier of India, 1897-8.—With Malakand Field Force. Medal with clasp.

Lane, A. H.—
Expedition to Dongola, 1896.—Operations of 19th Sept. Egyptian Medal.
S. African War, 1899-1900.

Barry, E. P. J.—
Operations on N.-W. Frontier of India, 1897-8. — With Tirah Exped. Force. Medal with 2 clasps.

Shore, W. F.—
Operations on N.-W. Frontier of India, 1897-8. — With Tirah Exped. Force. Medal with 2 clasps.

Carr, F. U.—
Operations on N.-W. Frontier of India, 1897-8. — With Tirah Exped. Force. Medal with 2 clasps.
S. African War, 1899-1901. — Severely wounded. Pro. Vety.-Capt.

Hunt, F. W.—
Operations on N.-W. Frontier of India, 1897-8.—With Tochi Field Force. Medal with clasp.
S. African War, 1899-1900.

Edwards, W. B.—
S. African War, 1902.

Rudd, T. W.—
Operations on N.-W. Frontier of India, 1897-8.—Medal.

Holmes, R. H.—
Operations on N.-W. Frontier of India, 1897-8. — With Tirah Exped. Force. Medal with 2 clasps.

Coley, J. T.—
S. African War, 1899-1901.

Millar, W. M.—
S. African War, 1902.

Anthony, W. S.—
Operations on N.-W. Frontier of India, 1897-8.—Medal with clasp.

Shore, F. H.—
S. African War, 1899-1901.

Pallin, W. A.—
China Expedition, 1900.

Bartlett, E. B.—
S. African War, 1899-1900.—Operations in Natal, 1899, including actions at Talana and Lombard's Kop. Defence of Ladysmith.

Cochrane, Robert Cecil.
Southey, James Brenchley.
Todd, Arthur George.
Durrant, Hector Montgomery.
Conder, Gerald.
Williams, Augustus John.
Griffith, John Joseph.

} *S. African War*, 1899-1902.

LIEUTENANTS.

Brown, Edward.
Houston, Robert Fisher St. Clair.
Olver, Arthur.
Quinlan, Dominick Joseph.
Aitken, John James.
Deacon, Arthur Floyd.
Dalgleish, Alexander John.
Welch, Howard Cecil.
Fisher, Otto Sareny.
Gamble, Henry.
Lake, Bruce Launcelot.
Head, Alfred Searle.
Knott, George Patrick.
Hylton-Joliffe, Conyers Herbert.
Jackson, George Thompson.
Lowe, William Cecil.
Swanston, Arthur Nelson Matcham.
Russell, John Alexander.
Steel, Charles Edward.
Gillett, Edward Scott.
Beatty, Philip Vandeleur.
Porteous, Richard.
Barnard, Lawrence.
Orton, Edward Charles.
Roberts, N. d'E.
Glane, M'G.
Nicol, W. H.
Probyn, F. S.
Mosley, H. S.

} All in *S. African War*, 1899-1902.

Retired.

INSPECTING VETY.-SURGEONS.

Anderson, John (retired pay)—
New Zealand War, 1860-6.—Taranaki and Waikato Campaigns, affairs of Keri Keri and Pukekohe, actions of Rangiaohia, Haeirini and the Gate Pa. Despatches, *Lond. Gaz.*, 23rd Oct. 1863. Medal.
Abyssinian Expedition, 1867-8.—Three times employed on Special Service. Despatches, *Lond. Gaz.*, 30th June 1868. Medal.
Afghan War, 1879-80.—With the Kuram Field Force, and afterwards with Khyber Line Force. Medal.
Egyptian Expedition, 1892.—As Prin. Vety.-Surgeon, Ind. Contingent. Battle of Tel-el-Kebir, march to and occupation of Cairo. Medal with clasp; bronze star.

Appleton, W. (retired pay)—
New Zealand War, 1863-6.—Attached to Military Train. Medal.
Afghan War, 1878-9.—Assault and capture of Ali Musjid, action at Futtehabad. Medal with clasp.

Collins, F. F. (retired pay)—
Afghan War, 1879.—As Prin. Vety.-Surgeon.

Gudgin, T. P. (retired pay)—
Crimean Campaign, 1854-5.—Affair of M'Kenzie's farm, battles of Balaclava, Inkerman, and Tchernaya, siege and fall of Sevastopol. Medal with 3 clasps and Turkish medal.
Indian Mutiny, 1858-9.—Siege and capture of Lucknow, Oude Campaign, action of Jame, assault and capture of Birwah, and affair at Bungaon in Trans Gogra. Medal with clasp.
S. African War, 1879.—Zulu Campaign. Despatches, *Lond. Gaz.*, 13th Dec. 1879. Medal with clasp.

Meyrick, J. J., C.B. (retired pay)—
Egyptian Expedition, 1882.—Prin. Vety.-Surgeon. Despatches, *Lond. Gaz.*, 2nd Nov. 1882. Medal; bronze star; 3rd class Osmanieh.

Owles, A. J. (retired pay)—
Crimean Campaign, 1855-6.—Siege and fall of Sevastopol. Medal with clasp and Turkish medal.
Indian Mutiny, 1857-8.—Actions of the Hindun, siege and capture of Delhi, taking of Bareilly, and operations in Oude. Medal with clasp.

Steel, C. (retired pay)—
Afghan War 1878-9.—Medal.

VETY.-SURGEONS—1st Class with Honorary Rank of Inspecting Vety.-Surgeon.

Baldock, J. (retired pay)—
Soudan Expedition, 1885.—Suakin. Medal with clasp; bronze star.

Hinge, D. I. (retired pay)—
Crimean Campaign, 1855-6.—Served after the fall of Sevastopol.
Soudan Expedition, 1885.—Suakin. As Insp. Vety.-Surgeon. Medal with clasp; bronze star.

Vety.-Surgeons (*continued*)—

Murray, R. W. (retired pay)—
Crimean Campaign, 1854-6.—Served with the Turkish Contingent; siege of Sevastopol. Medal with clasp; Turkish medal.

VETY.-SURGEONS—1st Class.

Adams, J. P. (retired pay)—
Afghan War, 1878-80.—Battle of Charasiah and operations round Kabul. Medal with 2 clasps.

Dawson, H. (retired pay)—
Persian Expedition, 1857.—Served with the 14th Hussars. Medal.
Indian Mutiny, 1857-8.—Served with the 14th Hussars in the campaign in Central India. Medal with clasp.

Jones, A. A. (retired pay)—
Abyssinian Expedition, 1867.—Action of Arogee and capture of Magdala. Medal.
S. African War, 1881.—Transvaal Campaign.
Soudan Expedition, 1884-5.—Nile. Medal with clasp; bronze star.

Kelly, Edward—
Indian Mutiny, 1858.

Skoulding, J. B. W. (retired pay)—
Crimean Campaign, 1856.—Served after the fall of Sevastopol.
Indian Mutiny, 1857-8.—Acted as staff officer at the storming of the Petta and capture of the Fort of Nurgoond. Despatches, *Lond. Gaz.*, 10th Aug. 1858. Medal.
China War, 1860.—Capture of Taku Forts. Medal with clasp.
Afghan War, 1879-80.—Medal.

DIRECTORS-GENERAL—VETY.-COLONELS.

Drummond Lambert, J. (retired pay)—
S. African War, 1879.—Zulu Campaign. Battle of Ulundi. Mentioned in Despatches. Medal with clasp. Transvaal Campaign—Prin. Vety.-Surgeon.

Duck, F.—
S. African War, 1877-8-9-81.—Operations against Sekukuni, 1878.—Kaffir Campaign.—Zulu Campaign, battles of Hlobana, Kambula, and Ulundi. Despatches, *Lond. Gaz.*, 21st Aug. 1879. Medal with clasp. Transvaal Campaign.
Bechuanaland Expedition, 1884-5.—Senior Vety.-Surgeon with the Force. Honourably mentioned. Pro. Vety.-Surgeon, 1st class, ranking with Majors.

VETY.-LIEUT.-COLONELS.

Berne, J. C. (retired pay)—
Abyssinian Expedition, 1868.—Medal.
Bechuanaland Expedition, 1884-5.

Clayton, C.—
Afghan War, 1870-80.—Actions of Ahmed

Vety.-Lieut.-Colonels (*continued*)—

Khel and Urzoo. Mentioned in Despatches. Medal with clasp. Pro. Vety.-Surgeon, 1st Class.

Egyptian Expedition, 1884.—Soudan.—Acted as Prin. Vet.-Surgeon Battles of Teb and Tamai. Despatches, *Lond. Gaz.*, 6th May 1884. Medal with clasp; bronze star. Pro. Vety.-Surgeon, 1st Class, ranking with Majors.

Ewing, E. (retired pay)—
Hazara Expedition, 1888.—Mentioned in Despatches. Medal with clasp.

Kettle, J. (retired pay)—
Abyssinian Expedition, 1867-8. Medal.

Oliphant, G. A. (retired pay)—
Afghan War, 1879-80.—With the Kuram Field Force as Prin. Vety.-Surgeon. Medal.

Oliver, G. A. A. (retired pay)—
Afghan War, 1879-80.—Action of Ghirisk, battle of Maiwand, and battle at Kandahar of 1st Sept. Medal with clasp.

Poyser, R., D.S.O. (retired pay)—
Afghan War, 1879-80.—Expeditions to the Lughman Valley, and against the Wuzeeri Khugianis. Medal.

Operations in Chitral, 1895.—With the Relief Force as Inspecting Vety.-Officer. Despatches, *Lond. Gaz.*, 15th Nov. 1895. Medal with clasp.

Reilly, James—
Abyssinian Expedition, 1867-8.—Medal.
S. African War, 1881.—Transvaal Campaign.

Walters, W. B. (retired pay)—
S. African War, 1879.—Zulu Campaign. Mentioned in Despatches. Medal.

Soudan Expedition, 1885.—Suakin. Prin. Vety.-Surgeon in Egypt. Despatches, *Lond. Gaz.*, 25th Aug. 1885. Medal with clasp; bronze star.

VETY.-MAJORS.

Bostock, A.—
Afghan War, 1880.—Medal.
S. African War, 1899-1900.

Burt, W. (retired pay)—
Zulu Campaign, 1879.—Mentioned in Despatches. Medal with clasp.

Egyptian Expedition, 1882.—Medal, bronze star.

Soudan Expedition, 1884-5.—Nile. Despatches, *Lond. Gaz.*, 25th Aug. 1885. Clasp.

Case, M. F. M. (retired pay)—
Egyptian Expedition, 1882.—Battle of Tel-el-Kebir, Medal with clasp; bronze star.

Soudan, 1888.—Suakin. Action at Gamaizah. Mentioned in Despatches. 3rd class Medjidie.

Crow, W. A. (retired pay)—
Egyptian Expedition, 1882.—Action of Kassassin and battle of Tel-el-Kebir. Medal with clasp; bronze star.

Miranzai Expedition, 1891.—Despatches, *Lond. Gaz.*, 6th Oct. 1891. Medal with clasp.

S. African War, 1899-1901.

Vety.-Majors (*continued*)—

Edwards, J. D. (retired pay)—
Afghan War, 1879-80.—Medal.

Evans, J. W. (retired pay)—
Egyptian Expedition, 1882.—Battle of Tel-el-Kebir. Medal with clasp; bronze star.

Gillard, C. W. (retired pay)—
Afghan War, 1880.—Advance to Kandahar. Medal.

S. African War, 1881.—Transvaal Campaign.—Pro. Vety.-Surgeon, 1st Class, for services in Afghanistan and South Africa.

Soudan Expedition, 1885.—Suakin. Medal with clasp; bronze star.

Gladstone, W. (retired pay)—
Soudan Expedition, 1885.—Suakin. Medal with clasp; bronze star.

Burmese Expedition, 1888-90.—Medal with clasp.

S. African War, 1889-1900.

Healy, M. F. (retired pay)—
S. African War, 1879.—Zulu Campaign. Mentioned in Despatches. Medal with clasp.

Killick, T. A. (retired pay)—
S. African War, 1879.—Zulu Campaign. Medal with clasp.

Mann, H. T. W.—
Egyptian Expedition, 1882.—Battle of Tel-el-Kebir. Medal with clasp; bronze star.

Dongola Expedition, 1896.—Served as Senior Vety.-Officer and Vety.-Inspector Suakin Force. Egyptian medal.

Operations on N.-W. Frontier of India, 1897-8.—As Senior Vety.-Officer with the Malakand Field Force, in expedition into the Mohmand country. Night attack of 20th Sept. (slightly wounded). Also with Buner Field Force as Senior Vety.-Officer. Despatches, *Lond Gaz.*, 22nd April 1898. Medal with clasp.

S. African War, 1899-1900.—Spec. Serv. Officer. Despatches, *Lond. Gaz.*, 10th Sept. 1901.

Pallin, D. C.—
S. African War, 1881.—Transvaal Campaign.

S. African War, 1899-1900.

Longhurst, S. (retired pay)—
S. African War, 1879.—Zulu Campaign. Mentioned in Despatches. Medal with clasp.

Walker, W. (retired pay)—
Afghan War, 1878-9.—Medal.

Whitfield, G. D. (retired pay)—
Egyptian Expedition, 1882.—Medal; bronze star.

Woods, J. A.—
Afghan War, 1878-9-80.—Operations at Kabul, march from Kabul to relief of Kandahar and battle of 1st Sept. Medal with 2 clasps; bronze star; pro. Vety.-Surgeon, 1st class.

Bechuanaland Expedition, 1884-5.

Grainger, J. K.—
Afghan War, 1880-1.—Medal.

Vety.-Majors (*continued*)—

Powell, B. A. W. (retired pay)—
Burmese Expedition, 1885-6.—Medal with clasp.

VETY.-CAPTAIN.

Burke, R. W.—
Egyptian Expedition, 1882. — Medal; bronze star.

WAR SERVICES OF OFFICERS OF THE INDIAN CIVIL VETERINARY DEPARTMENT.

MAJORS.

Morgan, J. W. A.—
S. African War, 1879.—Zulu Campaign. Medal with clasp.
Afghan War, 1879-80.—With the Khyber Line Force. Medal.

Hagger, W. R.—
S. African War, 1879.—Zulu Campaign. —Battle of Ulundi. Mentioned in Despatches. Medal with clasp.
Afghan War, 1879-80.—Action of Kam Dakha. Mentioned in Despatches. Medal.
Egyptian Expedition, 1882. — Medal; bronze star.

Majors (*continued*)—

Soudan Expedition, 1885.—Suakin. Clasp.
Hazara Expedition, 1891. — Despatches, *Lond. Gaz.*, 20th Oct. 1891. Medal with clasp.

Raymond, F.—
S. African War, 1879.—Zulu Campaign —Battle of Ulundi. Medal with clasp.
Operations in Chitral, 1895.—With the Relief Force. Medal with clasp.

Evans, G. H.—
Chin-Lushai Expedition, 1889-90. — Despatches, *Lond. Gaz.*, 12th Sept. 1890. Medal with clasp.

Retired.

VETY. HON. COLONEL.

Queripel, A. E. (retired pay)—
Afghan War, 1879-80.—Pro. Vety.-Surgeon, 1st class.
Soudan Expedition, 1884-5.—Nile. Action of Kirbekan. Despatches, *Lond. Gaz.*, 25th Aug. 1885. Medal with 2 clasps; bronze star. Pro. Vety.-Surgeon 1st class, ranking with Majors.

Communications, Books, Journals, &c., Received.

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